Proceedings of the American Academy of Arts and Sciences.

VOL. XXXIX. No. 24. — JUNE, 1904.

RECORDS OF MEETINGS, 1903–1904.

REPORT OF THE COUNCIL: BIOGRAPHICAL NOTICES.

HORACE GRAY. BY FRANCIS C. LOWELL.

WILLIAM SUMNER APPLETON. BY CHARLES C. SMITH.

JAMES ELLIOT CABOT. BY T. W. HIGGINSON.

ALFRED PERKINS ROCKWELL. BY R. H. RICHARDS.

HORATIO HOLLIS HUNNEWELL. BY C. S. SARGENT.

OFFICERS AND COMMITTEES FOR 1904–1905.

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RUMFORD PREMIUM.

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RECORDS OF MEETINGS.

Nine hundred and forty-first Meeting.

JUNE 17, 1903. — SPECIAL MEETING.

The RECORDING SECRETARY in the chair.

The Chair announced the death of Karl Gegenbaur, Foreign Honorary Member in Class II., Section 3.

Letters were read from William F. Ganong, accepting Fellowship; from W. F. Osgood resigning Fellowship; from the Royal Academy of Sciences of Turin, announcing the death of its Vice-President, Barnardino Peyron.

Mr. Rotch moved that a Committee be appointed by the Chair to confer with a Committee of the Boston Library Society relative to leasing a portion of its house, 114 Newbury Street, and to report in the autumn.

The Chair appointed the President, Librarian, and Treasurer.

On the motion of Professor Cross, it was

Voted, That the Recording Secretary be an additional member of this Committee.

The vacancy occasioned by the resignation of W. F. Osgood was filled by the appointment by the Chair of

Harry M. Goodwin, member of the Committee on the Library.

On the motion of Professor Wright, it was

Voted, To proceed to ballot for a Treasurer in place of Mr. Samuel Cabot, who had been elected at the annual meeting but had declined to serve.

The result of the balloting was the unanimous election of

Francis Blake, Treasurer.

The following papers were presented by title: —

"On the Prolongation of Spectral Lines." By Theodore Lyman.

"The Athenian Vase-Painter Brygos, and his Characteristics." By Oliver Samuel Tonks. Presented by John H. Wright.

Nine hundred and forty-second Meeting.

OCTOBER 14, 1903. — STATED MEETING.

The PRESIDENT in the chair.

The Chair announced the following deaths: —

J. Peter Lesley, Class II., Section 1; George S. Morison, Class I., Section 4, Associate Fellows.

Luigi Cremona, Class I., Section 1, Foreign Honorary Member.

The following gentlemen were elected members of the Academy: —

Charles Émile Picard, of Paris, to be a Foreign Honorary Member in Class I., Section 1 (Mathematics and Astronomy), in place of the late Hervé-Auguste Étienne Albans Faye.

Joseph Larmor, of Cambridge, to be a Foreign Honorary Member in Class I., Section 2 (Physics), in place of the late Sir George Gabriel Stokes.

The President announced the resignation of William L. Richardson as Auditor, and appointed Frederick J. Stimson in his place.

The following papers were presented by title: —

Quantitative Studies in the Evolution of Pecten. III. "Comparison of Pecten opercularis from three Localities of the British Isles." By C. B. Davenport.

"The Electrical Conductivity of Aqueous Solutions at High Temperatures." I. Description of the Apparatus. Results with Sodium and Potassium Chloride up to 306°. By Arthur A. Noyes and William D. Coolidge.

"Metabolism and the Reaction of Division in Protozoa." By Amos W. Peters. Presented by E. L. Mark.

"The Laws of Heredity of Galton and Mendel and some Laws Governing Race Improvement by Selection." By W. E. Castle.

"A Revision of the Atomic Weight of Iron." By Gregory Paul Baxter. Presented by T. W. Richards.

"The Color Changes in the Skin of the so-called Florida Chameleon, Anolis carolinensis Cuv." By Frank C. Carlton. Presented by E. L. Mark.

"On the real Automorphic Linear Transformation of a real Bilinear Form." By Henry Taber.

"On the Lines of Certain Classes of Solenoidal or Lamellar Vectors Symmetrical with Respect to an Axis." By B. O. Peirce.

The following report of Mr. Rotch on library accommodations, read by the Recording Secretary, was accepted and placed on file.

Mr. Rotch, Chairman of the Committee appointed at the Special Meeting of June 17, 1903, to confer with a Committee of the Boston Library Association, relative to leasing a portion of its newly acquired house, 114 Newbury Street, for the use of the Academy, reports that this was done in the early summer. The Recording Secretary, Treasurer, Librarian, and the late Assistant Librarian visited the premises and decided that without expensive alterations they would not meet the requirements of the Academy, and Mr. Rotch therefore informed the Secretary of the Society that the offer was declined.

The Treasurer is of the opinion that by capitalizing the rental of the present rooms in the Historical Society's building and adding thereto the Building Fund, land might be purchased in the vicinity and a suitable building erected for the use of the Academy.

Professor Goodwin, after expressing his appreciation of the honor conferred upon him by being chosen President of the Academy, proceeded to give some interesting reminiscences of meetings of the Academy which he attended thirty years ago.

He then gave the communication of the evening, "A Visit to the Palace of Minos at Gnossos in Crete."

Nine hundred and forty-third Meeting.

NOVEMBER 11, 1903.

The Academy met at the house of President Goodwin.

PRESIDENT GOODWIN in the chair.

The Chair announced the death of Theodor Mommsen, Foreign Honorary Member in Class III., Section 3.

The Corresponding Secretary read a letter from T. de Azcárate announcing his appointment as director of the Marine Observatory of San Fernando, Cadiz, Spain.

The following papers were read: —

"Medicine and Surgery in Ancient Rome." By Morris H. Morgan.

Remarks on this paper were made by Professors Bowditch, Lanman, and Dr. William Everett.

Biographical notice of the late William Sumner Appleton, by Charles C. Smith.

Nine hundred and forty-fourth Meeting.

DECEMBER 9, 1903.

The PRESIDENT in the chair.

Letters were received announcing the deaths of Professors Theodor Mommsen and Karl Gegenbaur; letters of acknowledgment of election from K. A. R. von Zittel, Émile Picard, and Joseph Larmor, Foreign Honorary Members. From the Royal Academy of Sciences of Sweden, two letters, one from the Nobel prize committee on Physics and one from the Nobel prize committee on Chemistry, soliciting names of competitors.

On the motion of the Corresponding Secretary these two letters were referred to the Rumford and C. M. Warren Committees.

The Corresponding Secretary announced that an invitation from the Schlesische Gesellschaft für Vaterländische Cultur in Breslau to attend its jubilee on the 17th of December had been received too late to name a delegate from the Academy to take part in the celebration, and that the Society would be informed of the regrets of the Academy at the delay.

The Chair announced the death of W. E. H. Lecky, Foreign Honorary Member in Class III., Section 3.

The following papers were presented by title: —

"Edge Corrections in the Calculation of the Absolute Capacity of Condensers by the Schwarzian Transformation," by Joseph G. Coffin. Presented by A. G. Webster.

"On Generalized Space Differentiation of the Second Order," by B. O. Peirce.

The following communication was made by Professor Raphael Pumpelly, illustrated with lantern projections: "Explorations in Turkestan."

Nine hundred and forty-fifth Meeting.

JANUARY 13, 1904. — STATED MEETING.

The Academy met by invitation at the house of Mr. Francis Bartlett, 236 Beacon Street.

The PRESIDENT in the chair.

The Chair announced the death of General Alfred P. Rockwell, of Boston, Resident Fellow in Class I., Section 4.

On motion of Professor C. R. Cross, Chairman of the Rumford Committee, and seconded by Professor A. G. Webster, it was

Voted, To grant the sum of five hundred dollars ($500) from the income of the Rumford Fund to Professor Edward W. Morley, of Adelbert College, in aid of his research on the nature and effect of ether drift.

The following paper was presented by title: —

"Contributions to our Knowledge of Heredity," by Alexander Petrunkévitch. Presented by E. L. Mark.

The following communication was given by Dr. Francis H. Williams: "Some of the Properties and Uses of Radium Salts."

Nine hundred and forty-sixth Meeting.

FEBRUARY 10, 1904.

VICE-PRESIDENT TROWBRIDGE in the chair.

The Chair announced the death of Karl A. Ritter von Zittel, of Munich, Foreign Honorary Member in Class II., Section 1.

The following paper was read by Dr. W. E. Castle: "Mendel's Law of Heredity, illustrated by Breeding Experiments with Guinea Pigs."

The following papers were presented by title:

Contributions from the Chemical Laboratory of Harvard College: "The Significance of Changing Atomic Volume. IV. The Effects of Chemical and Cohesive Internal Pressure." By Theodore William Richards.

Contributions from the Jefferson Physical Laboratory: "Spectra Produced by the Wehnelt Interrupter." By H. W. Morse. Presented by J. Trowbridge.

"The Green Schists and Porphyries of Rhode Island." By B. K. Emerson.

Contributions from the Gray Herbarium of Harvard University. New Series. — No. XXVIII.

I. "Revision of the Genus Sabazia." By B. L. Robinson and J. M. Greenman.

II. "Revision of the Mexican and Central American Species of Trixis." By B. L. Robinson and J. M. Greenman.

III. "Revision of the Mexican and Central American Species of Hieracium." By B. L. Robinson and J. M. Greenman.

IV. "Synopsis of the Mexican and Central American Species of Alnus." By M. L. Fernald.

V. "Diagnosis and Synonymy of Mexican and Central American Spermatophytes." By J. M. Greenman.

VI. "Some Mexican and Nicaraguan Dicotyledons." By M. L. Fernald.

Presented by B. L. Robinson.

Nine hundred and forty-seventh Meeting.

MARCH 9, 1904. — STATED MEETING.

VICE-PRESIDENT TROWBRIDGE in the chair.

The Corresponding Secretary read a circular from the Organizing Committee of the International Congress of Americanists, announcing that the fourteenth session of the Congress would be held at Stuttgart, in August, 1904.

The Chair announced the following deaths: H. E. von Holst, of Class III., Section 3, Associate Fellow; Sir Leslie Stephen, of Class III., Section 4, Foreign Honorary Member.

On motion of the Corresponding Secretary, it was

Voted, To send the following message to Sir Henry Enfield Roscoe, on the fiftieth anniversary of his graduation as a Doctor of Philosophy of the University of Heidelberg. "On this memorable anniversary of the beginning of a life-work rich in fruitful research and helpful service in the advancement of science, The American Academy of Arts and Sciences sends warmest greetings and enthusiastic congratulations."

The Chair appointed the following councillors to serve as Nominating Committee: —

George F. Swain, of Class I., Robert DeC. Ward, of Class II., Denman W. Ross, of Class III.

On motion of the Recording Secretary, it was

Voted, To meet on adjournment on the second Wednesday in April.

A biographical notice of the late J. Elliot Cabot was read by Colonel T. W. Higginson.

Remarks on the life and character of Mr. Cabot were made by Professor Barrett Wendell.

Nine hundred and forty-eighth Meeting.

APRIL 13, 1904. — ADJOURNED STATED MEETING.

The CORRESPONDING SECRETARY in the chair.

The Corresponding Secretary read letters from F. C. Thorpe acknowledging the receipt of a copy of the resolution passed by the Academy at its meeting on March 9; from the Naturhistorische Verein of Bonn, announcing the death of Dr. August Huyssen; from the Permanent Committee of the International Congress of Botany, requesting the Academy to appoint a delegate to the Congress to be held at Vienna, in June, 1905.

On motion of Professor Webster, for the chairman of the Rumford Committee, it was

Voted, To appropriate from the income of the Rumford Fund the sum of two hundred dollars ($200) to Professor Dewitt B.

Brace, in aid of an investigation of double refraction in gases in an electric field.

The following gentlemen were elected members of the Academy: —

Edward Stevens Sheldon, of Cambridge, to be a Resident Fellow in Class III., Section 2 (Philology and Archæology).

Herbert Weir Smyth, of Cambridge, to be a Resident Fellow in Class III., Section 2 (Philology and Archæology).

Eugene Woldemar Hilgard, of Berkeley, Cal., to be an Associate Fellow in Class I., Section 3 (Chemistry), in place of the late Ogden N. Rood.

James Duncan Hague, of New York, to be an Associate Fellow in Class I., Section 4 (Technology and Engineering), in place of the late George S. Morison.

Israel Cook Russell, of Ann Arbor, to be an Associate Fellow in Class II., Section 1 (Geology, Mineralogy, and Physics of the Globe), in place of the late Joseph Le Conte.

Abraham Jacobi, of New York, to be an Associate Fellow in Class II., Section 4 (Medicine and Surgery), in place of the late J. W. Powell.

Theophil Mitchell Prudden, of New York, to be an Associate Fellow in Class II., Section 4 (Medicine and Surgery), in place of the late J. P. Lesley.

Felix Klein, of Göttingen, to be a Foreign Honorary Member in Class I., Section 1 (Mathematics and Astronomy), in place of the late Luigi Cremona.

Adolf Harnack, of Berlin, to be a Foreign Honorary Member in Class III., Section 3 (Political Economy and History), in place of the late Theodor Mommsen.

Pasquale Villari, of Florence, to be a Foreign Honorary Member in Class III., Section 3 (Political Economy and History), in place of the late William Edward Hartpole Lecky.

Marié Louis Gaston Boissier, of Paris, to be a Foreign Honorary Member in Class III., Section 4 (Literature and the Fine Arts), in place of the late Gaston Bruno Paulin Paris.

The following communication was given by Colonel W. R. Livermore:

"On the Political Changes of Europe, especially from 1100 A. D. to the Present Time," illustrated by a series of colored maps, showing the boundaries of each tribe and nation for every ten years.

The following paper was presented by title: —

"On a New General Theory of Errors." By W. E. Story.

Nine hundred and forty-ninth Meeting.

MAY 11, 1904. — ANNUAL MEETING.

The PRESIDENT in the chair.

The Corresponding Secretary read the following letter from Sir Henry E. Roscoe, in reply to the congratulatory resolution passed by the Academy March 9, 1904:

"To my friends and brothers in Science living and working in New England, New York, and Pennsylvania, I, from Old England, send my affectionate greetings and best thanks.

"It is pleasant to receive, as I have done to-day, assurances of appreciation from those speaking other tongues than English and living in other environments than those to which one is accustomed, but it is a still greater pleasure to hear in familiar accents from people of the same blood having aims and sympathies closely akin to one's own, words of encouragement and good will. Such words you have sent me.

"English men of science look with brotherly admiration, sometimes perhaps not unmixed with envy, on the wonderful progress which America is wisely making in the provision for teaching and research of the highest kind, thanks to the open-handed liberality of her wealthy citizens.

"Nor with you is the prime mover wanting. You are rich in men willing to devote themselves to a scientific career, men gifted with the true scientific spirit. With this union of mind and matter who can place a limit to the work which America will produce?

"HENRY E. ROSCOE.

"APRIL 22, 1904."

The Corresponding Secretary also read letters from E. S. Sheldon, accepting Fellowship; I. C. Russell, A. Jacobi, acknowledging election as Associate Fellows. He also announced

that Professor B. L. Robinson had been appointed a delegate to the International Congress of Botany, to be held at Vienna, in June, 1905.

The Chair announced the death of Charles S. Storrow, Resident Fellow in Class I., Section 4.

The annual report of the Council was read.

The annual report of the Treasurer was read, of which the following is an abstract: —

GENERAL FUND.

Receipts.

Balance, April 30, 1903		$29.13
Investments	$5,877.20	
Assessments	905.00	
Admission fees	40.00	
Sale of publications	234.64	7,056.84
		$7,085.97

Expenditures.

General expenses		$2,896.17
Publishing	$2,251.34	
Library	1,496.37	
Catalogue	37.00	3,784.71
Balance, April 30, 1904		405.09
		$7,085.97

RUMFORD FUND.

Receipts.

Balance, April 30, 1903		$ 197.79
Investments	$2,705.94	
Sale of publications	16.00	2,721.94
		$2,919.73

Expenditures.

Researches	$1,525.00	
Publishing	587.47	
Library	234.58	
Miscellaneous	15.00	$2,362.05
Balance, April 30, 1904		557.68
		$2,919.73

WARREN FUND.

Receipts.

Balance, April 30, 1903		$1,161.57
Investments	$330.48	330.48
		$1,492.05

Expenditures.

Investigations	$1,000.00
Balance, April 30, 1904	492.05
	$1,492.05

BUILDING FUND.

Receipts.

Balance, April 30, 1903	$ 104.92
Investments	384.98
	$ 489.90
Income invested and transferred to capital account	$ 100.00
Balance, April 30, 1904	$ 389.90

The following reports were also presented: —

REPORT OF THE LIBRARIAN. 1903–4.

The library sustained an irreparable loss in the death of the Assistant-Librarian, Dr. Austin Holden, which occurred suddenly at his home in Newton, Sept. 30, 1903, at the age of forty-nine. Dr. Holden had been connected with the Academy for thirty-two years, having first come to the library in the autumn of 1871, to aid Dr. Dana, then Assistant-Librarian, Professor Asa Gray being then President, and Mr. Edmund Quincy, Librarian of the Academy. Upon the death of Dr. Dana in 1872, Dr. Holden succeeded to the office, and to the time of his death performed the duties with great fidelity and discrimination, always having the interests of the Academy at heart. His general knowledge of books and his genial courtesy were much appreciated by all who had occasion to use the library. His familiarity with the library as well as with the customs and rules of the Academy, was invaluable to the Librarian and the Secretaries, and the former takes this opportunity to express his high appreciation of the character and ability of Dr. Holden and of the long and faithful service which he has rendered to the Academy.

Mrs. Austin Holden, who temporarily took her husband's place, has been appointed Assistant-Librarian by the undersigned.

The card-catalogue was continued by Dr. Holden up to the time of his death, he having written 925 cards, making the total number of cards 7,225. Although of the appropriation made last year only $37 was spent, the usual appropriation of $100 from the income of the General Fund, and $50 from the income of the Rumford Fund is requested to continue this work of cataloguing.

The accessions during the year have been as follows: —

	Vols.	Parts of Vols.	Pams.	Maps.	Total.
By gift and exchange	439	2,568	548	12	3,567
By purchase — General Fund .	44	592	5		641
By purchase — Rumford Fund .	32	320			352
Total	515	3,480	553	12	4,560

17 volumes on light and heat, recommended by the Rumford Committee, were bought at an expense of $58.41.

229 books have been borrowed from the library by 27 persons, including 15 Fellows, one Fellow having taken out 140 of that number. All have been returned for the annual examination except 11. Of the 12 volumes reported not returned a year ago, 2 are still unaccounted for.

The expenses charged to the library are as follows: — Miscellaneous, which includes expenses in no way related to the library, $631.63; Binding, $452.90, General, and $42.35, Rumford Funds; Subscriptions, $411.84 General, and $152.43, Rumford Funds; making a total of $1,496.37 for the General and $194.78 for the Rumford Funds. In explanation of the excess of the expenditure for miscellaneous items over the appropriation of $500, it may be said that a larger amount of printing is now done than formerly, and that this year some office furniture was purchased. The increase in the subscriptions paid, over those of the preceding year, is due to including some that cover next year.

An appropriation of $1,400 from the income of the General Fund is requested, in addition to the customary appropriation of $150 from the income of the Rumford Fund for the purchase of books and periodicals.

A. Lawrence Rotch, *Librarian.*

Report of the Rumford Committee.

The following grants have been made by the Committee from the sum of $1000 which was placed at its disposal at the last Annual Meeting of the Academy.

Oct. 14, 1903. Three hundred dollars to Professor W. J. Humphreys of the University of Virginia, in aid of his research on the shift of spectral lines due to pressure.

Oct. 14, 1903. Two hundred and fifty dollars to Professor N. A. Kent of Wabash College, in aid of his research on the circuit conditions influencing electric spark lines.

Jan. 13, 1904. Two hundred dollars to Mr. J. A. Dunne of Harvard College Observatory, in aid of his research on fluctuations in solar activity as evinced by changes in the difference between maximum and minimum temperatures.

Jan. 13, 1904. Two hundred dollars to Professor Carl Barus of Brown University, in aid of his research on the study by an optical method of radio-actively produced condensation nuclei.

At the meeting of Nov. 11, 1903, it was voted to request the Academy to appropriate the sum of five hundred dollars from the income of the Rumford Fund to Professor Edward W. Morley of Adelbert College, in aid of his research on the nature and effects of ether drift; and at the meeting of Feb. 10, 1904, it was voted to request the Academy to appropriate from the same a sum not exceeding two hundred dollars to Professor Dewitt B. Brace of the University of Nebraska, in aid of his investigation on double refraction in gases in an electrical field.

The Academy granted the sums of five hundred dollars and two hundred dollars to the respective applicants as recommended by the Committee.

At the meeting of April 13, 1904, it was voted to appoint a subcommittee consisting of Professor Webster, Mr. Leavitt, and Professor Thomson to report upon the desirability of a new determination of the specific heat of super-heated steam.

At the same meeting the following votes were passed:

1. To request the Academy to appropriate the sum of one thousand dollars from the income of the Rumford Fund for the immediate needs of the Committee in furtherance of research.

2. To request the Academy to appropriate from the income of the Rumford Fund the sum of one hundred and fifty dollars for the purchase and binding of the usual periodicals.

3. To recommend to the Academy to appropriate from the income of the Rumford Fund the sum of fifty dollars for the purchase of books relating to light and heat.

At the meeting of Feb. 10 it was voted unanimously for the first time, and at the meeting of April 13 for the second time, to recommend to the Academy the award of the Rumford Premium to Professor

Ernest Fox Nichols of Columbia University, for his researches on Radiation, — particularly on the pressure due to radiation, the heat of the stars, and the infra-red spectrum.

Reports upon the progress of researches aided from the Rumford Fund have been received from the following persons: C. Barus, F. L. Bishop, A. L. Clark, J. A. Dunne, E. B. Frost, G. E. Hale, E. H. Hall, W. J. Humphreys, N. A. Kent, F. A. Laws, R. S. Minor, E. W. Morley, E. F. Nichols, A. A. Noyes, E. C. Pickering, T. W. Richards, F. A. Saunders, S. D. Townley, R. W. Wood.

Since the last Annual Meeting papers as follows have been published in the Proceedings at the expense of the Rumford Fund: —

Lyman, T. An Explanation of the False Spectra from Diffraction Gratings.

Wood, R. W. The Anomalous Dispersion, Absorption, and Surface Color of Nitroso-dimethyl-aniline.

Noyes, A. A., and Coolidge, W. D. The Electrical Conductivity of Aqueous Solutions at High Temperatures. 1. Description of the Apparatus. Results with Sodium and Potassium Chloride up to 306°.

Morse, H. W. Spectra from the Wehnelt Interrupter.

CHAS. R. CROSS, *Chairman.*

REPORT OF THE C. M. WARREN COMMITTEE.

The C. M. Warren Committee begs leave to report that letters have been received from Professor Mabery, from Professor H. O. Hofman, and from Dr. S. A. Mulliken, reporting satisfactory progress in the work aided by grants voted by the Academy at the last Annual Meeting.

The Committee recommends that the income of the C. M. Warren Fund for the past year, $342.05, be placed at the disposal of the Committee for use in the furtherance of Chemical Research.

LEONARD P. KINNICUTT, *Chairman.*

REPORT OF THE COMMITTEE OF PUBLICATION.

Since the last Annual Report there have been published three numbers of Volume XXXVIII. of the Proceedings, and the first twenty numbers of Volume XXXIX., amounting to 627 pages and 10 plates. Five biographical notices have also been printed. On the second and third pages of the cover of each article in the Proceedings is now printed a price-list of the articles contained in the current volume and the one immediately preceding it. This was begun with No. 6 of the current volume.

One number of Volume XXXVIII. (No. 25), and three numbers of Volume XXXIX. (Nos. 3, 4, 7), were printed at the expense of the Rumford Fund, and one number, having been printed elsewhere before it appeared in the Proceedings, was paid for by the author.

The unexpended balance of appropriations from the General Fund for publications on April 30, 1903, was $211.18; the appropriation for the year now ended, $2,400; and the receipts from sales of publications, $234.64, making the total amount available for publications, $2,845.82. The total expenditures to April 30, 1904, exclusive of those paid from the Rumford Fund, have been $2,251.34, leaving an unexpended balance of $594.38.

E. L. MARK, *Chairman.*

May 11, 1904.

On the recommendation of the Committee of Finance, it was

Voted, To make the following appropriations from the income of the General Fund for the expenditures of the Academy during the ensuing year: —

For general expenses		$3,000
For publishing		2,400
For the library		
Books and binding	$900	
Miscellaneous	500	
Catalogue	100	1,500
		$6,900

On the recommendation of the Rumford Committee, it was

Voted, To make the following appropriations from the income of the Rumford Fund: —

For the immediate needs of the Rumford Committee in furtherance of research, $1,000.

For the purchase and binding of periodicals, $150.

For the purchase and binding of certain specified books on light and heat, $50.

On the recommendation of the C. M. Warren Committee, it was

Voted, To make the following appropriation from the income of the C. M. Warren Fund: —

For the use of the C. M. Warren Committee in furtherance of chemical research, $342.05.

On the motion of the Recording Secretary, it was

Voted, That the annual assessment for the ensuing year be five dollars ($5).

The annual election resulted in the choice of the following officers and committees: —

WILLIAM W. GOODWIN, *President.*
JOHN TROWBRIDGE, *Vice-President for Class I.*
HENRY P. WALCOTT, *Vice-President for Class II.*
JOHN C. GRAY, *Vice-President for Class III.*
EDWIN H. HALL, *Corresponding Secretary.*
WILLIAM WATSON, *Recording Secretary.*
FRANCIS BLAKE, *Treasurer.*
A. LAWRENCE ROTCH, *Librarian.*

Councillors for Three Years.

ELIHU THOMSON, of Class I.
WILLIAM T. SEDGWICK, of Class II.
JOHN H. WRIGHT, of Class III.

Member of Committee of Finance.

ELIOT C. CLARKE.

Rumford Committee.

ERASMUS D. LEAVITT, AMOS E. DOLBEAR,
EDWARD C. PICKERING, ARTHUR G. WEBSTER,
CHARLES R. CROSS, THEODORE W. RICHARDS,
ELIHU THOMSON.

C. M. Warren Committee.

LEONARD P. KINNICUTT, ROBERT H. RICHARDS,
SAMUEL CABOT, HENRY P. TALBOT.
ARTHUR M. COMEY, ARTHUR MICHAEL,
CHARLES R. SANGER.

The following standing committees were appointed by the Chair: —

Committee of Publication.

SETH C. CHANDLER, of Class I., EDWARD L. MARK, of Class II., CRAWFORD H. TOY, of Class III.

Committee on the Library.

HARRY M. GOODWIN, of Class I., SAMUEL HENSHAW, of Class II., HENRY W. HAYNES, of Class III.

Auditing Committee.

HENRY G. DENNY, FREDERICK J. STIMSON.

On the recommendation of the Rumford Committee, it was

Voted, To award the Rumford Premium to Ernest Fox Nichols of Columbia University.

On the motion of the Recording Secretary, it was

Voted, That the thanks of the Academy be tendered to William M. Davis for his faithful and efficient services as Corresponding Secretary.

David G. Lyon gave an account, illustrated with lantern projections, of "The Recently Discovered Code of Laws, Promulgated by Hammurabi, King of Babylon, Twenty-third Century B.C."

The following papers were presented by title: —

"Studies on Transformation of Saturnia Moths, with Notes on the Life-History and Affinities of Brahmaea Japonica." By A. S. Packard.

"Heredity of Coat Color in Mice," by G. M. Allen. Presented by E. L. Mark.

"Sexual Reproduction in the Mucorineae," by A. F. Blakeslee. Presented by R. Thaxter.

"On Mandragora as an Anæsthetic," by C. R. Randolph. Presented by M. H. Morgan.

"A Problem in Statics and its Relation to Certain Algebraic Invariants," by Maxime Bôcher.

Contribution No. 2 from the Research Laboratory of Physical Chemistry, Massachusetts Institute of Technology, "The Electrical Conductivity of very Dilute Solutions of Hydrochloric and Nitric Acids," by H. M. Goodwin and Raymond Haskell. Presented by H. M. Goodwin.

AMERICAN ACADEMY OF ARTS AND SCIENCES.

REPORT OF THE COUNCIL. — PRESENTED MAY 11, 1904.

BIOGRAPHICAL NOTICES.

HORACE GRAY . . . . . FRANCIS C. LOWELL.

WILLIAM SUMNER APPLETON . . . . . CHARLES C. SMITH.

JAMES ELLIOT CABOT . . . . . T. W. HIGGINSON.

ALFRED PERKINS ROCKWELL . . . . . R. H. RICHARDS.

HORATIO HOLLIS HUNNEWELL . . . . . C. S. SARGENT.

REPORT OF THE COUNCIL.

The Academy has lost eleven members by death since the last report of the Council at the annual meeting of May 13, 1903: two Resident Fellows, Alfred P. Rockwell, Charles S. Storrow; three Associate Fellows, H. E. von Holst, J. P. Lesley, and George S. Morison; six Foreign Honorary Members, L. Cremona, K. Gegenbaur, W. E. H. Lecky, T. Mommsen, Sir L. Stephen, K. A. von Zittel. One Resident Fellow has resigned; one Associate Fellow has been transferred to Resident Fellowship.

New members have been elected as follows: — Resident Fellows (including two elected May 13, 1903), 4; Associate Fellows, 5; Foreign Honorary Members, 6. The roll of the Academy now includes 199 Resident Fellows, 100 Associate Fellows, and 73 Foreign Honorary Members.[1]

HORACE GRAY.

HORACE GRAY was born in Boston, March 24, 1828, the son of Horace Gray and Harriet Upham. His mother, the daughter of Jabez Upham, a distinguished lawyer, died while he was a little child, and when he was nine years old his father married Sarah Russell Gardner, the mother of his half-brothers, John Chipman and Russell. His paternal grandfather was William Gray, the famous merchant and the owner of a great fleet of ships. Horace Gray graduated at Harvard College in 1845, being in his eighteenth year, very young even for those days. As a youth he knew animals, birds, and flowers. He was famed among boys for the accuracy with which he threw a stone, sometimes hitting a bird on the wing. After graduation he went to Europe for general travel, but was recalled to this country by the failure of his father in business. He entered the Harvard Law School in 1847, two years after his graduation, younger, nevertheless, than most of his fellow-students. He took the degree of LL.B. in 1849, studied in the office of Sohier and Welch, and was admitted to the Bar in 1851. Soon afterward he was employed by Mr. Cushing, reporter of decisions, to go on circuit with the full bench. As has been said by Senator Hoar, "He had already acquired a great stock of learning for a man of his age. Even then his

[1] Note: In the Proceedings of last year, Vol. XXXVIII., p. 730, the number of Associate Fellows at the time of the Annual Report of the Council should have been given as 99 (not 98), and of Foreign Honorary Members as 73 (not 72).

wonderful capacity for research, the instinct which, when some interesting question of law was up, would direct Gray's thumb and finger to some obscure volume of English Reports of Law or Equity, was almost like the scent of a wild animal or a bird of prey. When any one of the great lawyers of Massachusetts was arguing or was waiting to argue a great case, the young reporter would often appear to him with a case which the counsel had not discovered, and was pat to the question. So, although he was hardly out of his boyhood, they all got to like him as a companion, and to respect him as a lawyer. When Cushing died, most of these lawyers joined in a recommendation for the appointment of Gray, who was then but twenty-six years old." He was reporter for six years, being also engaged in practice during the time. For about two years he was a partner of Ebenezer Rockwood Hoar, afterwards his associate in the Supreme Court of Massachusetts and Attorney-General of the United States. Later he was in partnership with Wilder Dwight and Charles F. Blake. Mr. Gray's practice at the bar was considerable, though not very large; the cases which he argued were more important than numerous. He was appointed by Governor Andrew associate justice of the Supreme Judicial Court of Massachusetts, August 23, 1864; chief justice of the same court by Governor Washburn, September 5, 1873; and finally was appointed associate justice of the Supreme Court of the United States by President Arthur, December 20, 1881. He resigned that office August, 1902, and died at Nahant on the fifteenth day of September, in that year.

Law is more than justice. Its administration seeks something more than justice between man and man in the particular case before the court. It is order as well as justice, established that the citizen may know, surely and beforehand, what will be the consequence of his acts, so that he may direct them accordingly. In not a few matters, it is better that the law should be settled than that it should be right. If given words have an interpretation absolutely fixed, for example, they can be used with safety, however absurd may have been the interpretation originally reached; but if they are interpreted now in one sense and now in another, no man is safe.

Horace Gray had a strong sense of order. He had a great memory, and its order was even more remarkable than its extent and its accuracy. His learning was ready for use, so arranged that everything which related to the subject he was considering could be produced without admixture of the irrelevant. His mental index was so perfect that nothing was found under the wrong heading. The orderly administration

of courts he delighted in. It is literally true, I believe, that, without notice, he could have discharged in any American or English court the duties of any officer from crier to chief justice, so that his example would have profited the regular incumbent. He had been a model reporter of the opinions of others, and he aided greatly those who reported his own opinions. The ordinary judge, wisely enough, leaves clerical details to his clerk, and refuses to burden his mind with them. Judge Gray thoroughly respected a good clerk, and was outspoken in his commendation when he found one; but he always directed his clerk in nice technicalities, and a good clerk knew the value of his direction. His standard of decorum was high. He perceived that faults of deportment, insignificant in themselves, when often repeated may bring a court into real disrespect. As head of the judiciary of Massachusetts, he had to maintain by example the dignity of lesser men as well as his own. If his masterfulness and a certain quickness of temper made him not always tactful in his rebukes, it must be remembered that the leaders of the bar were the sufferers, and that a beginner was often helped by his exceptional kindness and gentleness. The rule by which he ordered his own actions was severer than that which he applied to the conduct of others. "While any capital case was on trial before him, in the days when such trials were had in the Supreme Judicial Court, he never took part in any social function or entertainment. He was once heard to say that he believed that, when a man's life was at stake, the judge presiding at the trial should give himself entirely to the cause before him, and that during the trial, while not in court, he should hold himself aloof from the ordinary distractions of the world, and keep his mind in contemplation only of the responsible and serious duty which he was performing." *

These matters of detail, important as he deemed them, were not allowed to encumber his administration of the law. His knowledge of the elaborate system of equity was used to give relief to a deserving suitor, not to delay or deny justice. In his administration equitable remedies, such as injunctions, were used to make good the defects of the common law, not sold, like common-law writs, for a fee to the clerk. On the other hand, he developed and extended those remedies when a new need called for a novel exercise of the jurisdiction of the chancellor. He was an historical rather than a philosophical lawyer. As he himself put it in one of his earliest opinions, "This subject illustrates the wisdom

* Memorial of the Boston Bar Association, p. 13.

of the common law in taking for its guides judicial opinions, given after argument, under the responsibility of determining the rights of parties in actual controversies, rather than the theories of scholars and commentators, however learned or acute." * He liked historical research, and, until he knew everything that history could tell him, he was unwilling to decide a case. He had both the thoroughness and the accuracy of the scholar. No relevant detail was overlooked. Having learned the development of the doctrine which governed the case before him, he had the scholar's proper pride in setting out that development so fully that no other man need repeat the investigation. In his longer opinions, the historical statement often made the largest part, but this could hardly be otherwise. He did not value precedents for their age or peculiarity. He turned to the Year Books not very often, and always referred to the case last decided in the authoritative courts of England and the United States. His antiquarian learning did not cost him his sense of proportion.

Once a judge, he gave to his judicial duties his entire service. With his talents and habits of mind, that service would have been of great value had it begun only in middle life. Appointed to the Supreme Court of Massachusetts at thirty-six, he had gathered before middle life a fund of judicial experience. For a year he sat on the bench of Massachusetts with Theron Metcalf, born five years before the adoption of the federal constitution. As circuit justice of the first circuit, he had for four years as a subordinate colleague a district judge seventy-one years Judge Metcalf's junior, born only six years before the outbreak of the rebellion. His opinions are contained in forty-three volumes of Massachusetts reports and in seventy-nine volumes of reports of the Supreme Court of the United States. He learned to be a judge while his habits of mind were flexible. In matters other than judicial, his opinions were vigorously expressed without much hesitation, and some of his prejudices were considerable. In deciding a case, his consideration was not less patient than was his research exhaustive. As his secretary during his last twenty months in Massachusetts, I observed that he examined literally every case cited in every brief, unless the case cited was already familiar to him. Lawyers know almost as well as judges how recklessly citations are sometimes shovelled into a brief in the hope that the court may find in them something relevant which counsel have not had time to discover, and they will appreciate Judge Gray's unalterable patience. One of his latest secretaries has told me

* Kimball *v.* Aetna Ins. Co., 9 All. 540, 551.

that his patience was the same when he was seventy years old. Again, he found in me, as I doubt not he found in some of the other young men who afterwards served him, a youth fresh from the law school, ready to argue with a good deal of confidence any legal point whatsoever, and not inclined to drop the argument when he had before him so lively and open-minded a disputant as the chief justice. Yet I remember that he never checked my persistence but once, and then most gently. He was in no hurry to make up his mind, glad even to the last moment to hear anything which might properly affect his decision. After leaving his brother judges, he began his further consideration of a case by discussion with his secretary, and examined and considered the authorities by himself or with the help of his secretary in bringing the books. He used no stenographer. In Massachusetts his dictation was taken down in long hand; in Washington he wrote the first rough draft with a pencil, and this was copied out by his secretary and corrected by the judge in printed proof. His handwriting — rather handsome when given room to extend itself — when confined was not always easily legible. Proud was the moment when a secretary was able to read an inscription which the judge himself could not decipher. I have said that he kept his mind always open to reconsideration for sufficient reason, but he had none of that paralysis of doubt which leads some otherwise excellent judges to postpone a decision until the decision has ceased to be of much use. He knew that a decision upon matters of fact can hardly be made too soon. "He at once made it a rule," Mr. Samuel Hoar has told us, "always to decide every question of fact submitted to him for determination before he went to bed that night, and to make at the time a minute of the decision; the questions of law could safely wait for a more deliberate examination."

He excelled at Nisi Prius, and at equity sittings, but his lasting reputation, like that of other great judges, is based upon his written opinions. His style had not much of that felicity and distinction which sometimes — though rarely — make literature of a law report, but his meaning was clear. This was his object, and almost his only one. He did not deem himself to be the sole author of the opinion which he composed, but rather the mouthpiece of a body of which he was only one member. Hence this style was impersonal. He spent no time searching for a neatly turned phrase, though he would change his words over and over again if their meaning seemed obscure. Rhetorical effort in the expression of matters not purely literary, even when successful, often savors of affectation. The opinions of some judges manifest this affectation; his never. Nature and experience enabled him to write easily.

His skill in framing rules, decrees, and such formal matters, helped by his sense of order, was wonderful. In the correction of all that he wrote he spared no pains.

As has been said, his historical study made not a few of his opinions longer than they would have been if written by another judge. Doubtless he gave himself to historical research in cases where another judge would have neglected it, satisfied that research could not affect the decision. I do not find that his historical exposition was ever irrelevant. That the experience of the past has important bearing upon such matters as the lawfulness of acts done under color of military authority, the precise definition of the term soldier,* an abutter's ownership of the fee in a street,† the legality of a lease of land in a rebel state,‡ to take a few of his earliest important opinions at random, must be plain even to one who is not a lawyer. And, as he said himself, "In construing any act of legislation, whether a statute enacted by the legislature, or a constitution established by the people as the supreme law of the land, regard is to be had, not only to all parts of the act itself, and of any former act of the same law-making power, of which the act in question is an amendment; but also to the condition, and to the history, of the law as previously existing, and in the light of which the new act must be read and interpreted." § So also of cases concerned with the conflict of laws and with international law.‖ In the Arlington Heights case, the wealth of learning contained in his dissenting opinion has seemed to many persons, as it seemed to the majority of the court, beside the question involved; but it must be remembered that three of his colleagues agreed with him, among them Judge Bradley, after Gray himself the most learned member of the court.

"He is often called a great case lawyer," said Mr. E. R. Thayer, one of his secretaries in Washington, "as if his greatest gifts were in the direction of recording the thoughts of others rather than in original thought of his own. I believe this to be a misconception, and one for which the style of his opinions is largely responsible. I have often regretted some features of this style, as failing to do justice to himself; but these features were due primarily to a conception of the judge's duty to which he held with the strength that characterized all his views on questions of principle and obligation. In the matter of giving

* Tyler *v.* Pomeroy, 8 All. 480.

† Boston *v.* Richardson, 8 All. 146.

‡ Kershaw *v.* Kelsey, 100 Mass. 561.

§ U. S. *v.* Wong Kim Ark, 169 U. S. 649, 653, 654.

‖ Ross *v.* Ross, 129 Mass. 243; The Paquete Habana, 175 U. S. 677.

credit to others he held himself up to the strictest standard applicable to forms of literature in which originality is a more essential feature than in opinion writing, and would say nothing as his own which another judge had said before him. This, with a knowledge of the past which seemed like a miracle, and a habit of condensing his own statements as severe as his quotations from others were generous, made it appear as if the larger part of his work was that of marshalling cases. But any of his secretaries knows that it was not so; and I suppose there is not one of them who has not many times urged him, as I have so often done, to incorporate in his opinion the forcible and brilliant original reasoning which, as we listened to it, seemed to bring light into the darkest corners of his subject. But he would only answer, 'You will find it all there' (indicating a passage where another judge had said something like it, but generally, as it seemed to us, not half so well), or else he would point to the passage which can always be found somewhere in his opinions, usually near the end, in which his own matter is stated with the condensation almost of a head-note, and would say, 'Why does n't that cover it, after all?'"

His exposition was not the collocation of unrelated facts. Fair in his statement, he did not put his opinion together until he saw the result which his study and exposition would establish, and the bearing upon that result of every precedent cited. This is conspicuous in Jackson *v.* Phillips, 14 All. 539, where he established the extent of the great doctrine of charitable trusts, which has done so much for Massachusetts. Here his language, without rhetorical exaggeration, has an unusual stateliness. So firmly is the opinion put together, that it can be appreciated fully only by reading it as a whole, but some of its paragraphs may be taken as illustrations of his style. The court had to determine the validity of a bequest made in 1861 to "create a public sentiment that will put an end to negro slavery in this country."

"The bequest itself manifests its immediate purpose to be to educate the whole people upon the sin of a man's holding his fellowman in bondage; and its ultimate object, to put an end to negro slavery in the United States; in either respect, a lawful charity.

"It is universally admitted that trusts for the promotion of religion and education are charities. Gifts for the instruction of the public in the cure of the diseases of quadrupeds or birds useful to man, or for the prevention of cruelty to animals (either by publishing newspapers on the subject, or by providing establishments where killing them for the market might be attended with as little suffering as possible), have been held charitable in England. London University *v.* Yarrow, 23 Beav.

159; s. c. 1 De Gex & Jones, 72; Marsh *v.* Means, 3 Jur. (N. S.) 790; Tatham *v.* Drummond, 11 Law Times (N. S.) 325. To deliver men from a bondage which the law regards as contrary to natural right, humanity, justice, and sound policy, is surely not less charitable than to lessen the sufferings of animals. . . . This bequest directly tends to carry out the principles thus declared in the fundamental law of the Commonwealth. And certainly no kind of education could better accord with the religion of Him who came to preach deliverance to the captives, and taught that you should love your neighbor as yourself and do unto others as you would that they should do unto you.

"The authorities already cited show that the peaceable redemption or manumission of slaves in any manner not prohibited by law is a charitable object. It falls indeed within the spirit, and almost within the letter, of many clauses in the Statute of Elizabeth. It would be an anomaly in a system of law, which recognized as charitable uses the relief of the poor, the education and preferment of orphans, marriages of poor maids, the assistance of young tradesmen, handicraftsmen, and persons decayed, the relief of prisoners and the redemption of captives, to exclude the deliverance of an indefinite number of human beings from a condition in which they were so poor as not even to own themselves, in which their children could not be educated, in which marriages had no sanction of law or security of duration, in which all their earnings belonged to another, and they were subject, against the law of nature, and without any crime of their own, to such an arbitrary dominion as the modern usages of nations will not countenance over captives taken from the most barbarous enemy.

"The next question arises upon the bequest in trust for the benefit of fugitive slaves who might from time to time escape from the slaveholding States of the Union.

"The validity of this bequest must be determined according to the law as it stood at the time when the testator died and from which his will took effect. It is no part of the duty of this court to maintain the constitutionality, the justice, or the policy of the fugitive slave acts, now happily repealed. But the Constitution of the United States, at the time of the testator's death, declared that no person held to service or labor in one State should be discharged therefrom by escaping into another. It may safely be assumed that, under such a constitution, a bequest to assist fugitive slaves to escape from those to whom their service was thus recognized to be due, could not have been withheld and enforced as a lawful charity. The epithets with which the testator accompanied this bequest show that he set his own ideas of moral duty above his

allegiance to his State or his country; and warrant the conjecture that he would have been well pleased to have the fund applied in a manner inconsistent with the Constitution and laws of the United States. But he has used no words to limit its use to illegal methods, and has left his trustees untrammelled as to the mode of its application. . . .

"A bequest for the benefit of fugitive slaves is not necessarily unlawful. The words 'relief or redemption of prisoners and captives' have always been held in England to include those in prison under condemnation for crime, as well as persons confined for debt; and to support gifts for distributing bread and meat among them annually, or for enabling poor imprisoned debtors to compound with their creditors. Duke, 131, 156; Attorney General *v.* Ironmongers' Co., C. P. Coop. Pract. Cas. 285, 290; Attorney General *v.* Painterstainers' Co., 2 Cox Ch. 51; Attorney General *v.* Drapers' Co., Tudor, 591, 592; s. c. 4 Beav. 67; 36th Report of Charity Commissioners to Parliament, pt. vi. 856-868. It would be hardly consistent with charity or justice to favor the relief of those undergoing punishment for crimes of their own committing, or imprisonment for not paying debts of their own contracting; and yet prohibit a like relief to those who were in equal need, because they had withdrawn themselves from a service imposed upon them by local laws without their fault or consent. . . .

"To supply sick or destitute fugitive slaves with food and clothing, medicine and shelter, or to extinguish by purchase the claims of those asserting a right to their service and labor, would in no wise have tended to impair the claim of the latter or the operation of the Constitution and laws of the United States; and would clearly have been within the terms of this bequest. If, for example, the trustees named in the will had received this fund from the executor without question, and had seen fit to apply it for the benefit of fugitive slaves in such a manner, they could not have been held liable as for a breach of trust.

"This bequest, therefore, as well as the previous one, being capable of being applied according to its terms in a lawful manner at the time of the testator's death, must, upon the settled principles of construction, be held a valid charity."

A like subordination of great historical learning and research to the questions raised in a particular case is exemplified in United States *v.* Wong Kim Ark, 169 U. S. 649, decided thirty years after Jackson *v.* Phillips. The question there concerned the citizenship of a child of Chinese parents living in the United States at the time of his birth. After elaborate historical exposition covering some forty octavo pages, the matter is thus summed up.

"The foregoing considerations and authorities irresistibly lead us to these conclusions: The Fourteenth Amendment affirms the ancient and fundamental rule of citizenship by birth within the territory, in the allegiance and under the protection of the country, including all children here born of resident aliens, with the exceptions or qualifications (as old as the rule itself) of children of foreign sovereigns or their ministers, or born on foreign public ships, or of enemies within and during a hostile occupation of part of our territory, and with the single additional exception of children of members of the Indian tribes owing direct allegiance to their several tribes. The Amendment, in clear words and in manifest intent, includes the children born within the territory of the United States, of all other persons, of whatever race or color, domiciled within the United States. Every citizen or subject of another country, while domiciled here, is within the allegiance and the protection, and consequently subject to the jurisdiction, of the United States. His allegiance to the United States is direct and immediate, and, although but local and temporary, continuing only so long as he remains within our territory, is yet, in the words of Lord Coke, in Calvin's Case, 7 Rep. 6*a*, 'strong enough to make a natural subject, for if he hath issue here, that issue is a natural-born subject;' and his child, as said by Mr. Binney in his essay before quoted, 'if born in the country, is as much a citizen as the natural-born child of a citizen, and by operation of the same principle.' It can hardly be denied that an alien is completely subject to the political jurisdiction of the country in which he resides — seeing that, as said by Mr. Webster, when Secretary of State, in his Report to the President on Thrasher's Case in 1851, and since repeated by this court, 'independently of a residence with intention to continue such residence; independently of any domiciliation; independently of the taking of any oath of allegiance or of renouncing any former allegiance, it is well known that, by the public law, an alien, or a stranger born, for so long a time as he continues within the dominions of a foreign government, owes obedience to the laws of that government, and may be punished for treason, or other crimes, as a native-born subject might be, unless his case is varied by some treaty stipulation.'" 169 U. S. 693, 694.

Even in his longest opinions I do not find diffuseness of expression. The majority in number of his opinions are both short and terse, not a few of these dealing with important questions of law. A good example of compressed statement and reasoning is Osborne *v.* Morgan, 130 Mass. 102, a case concerned with liability for negligence causing damage to a fellow servant, covering four pages and a half.

While he was a judge, without thought of other ambition, yet he was

no narrow specialist. He worked hard and fast, without haste, and took substantial vacations. He said that a man could do more work in five days of the week than in six, in eleven months of the year than in twelve. To speak as a New Englander, he loafed not infrequently when his work was over, but he never dawdled. He loved to be out of doors, went often into the woods fishing and shooting; notwithstanding his great size he rode on horseback until middle life, and later took up the game of golf. He read many books of many sorts with marvellous quickness. His literary taste was simple and healthy. He admired the English of the Bible, and wished that he might be a delegate to any convention of the Episcopal Church before which a proposal to substitute the revised for the authorized version should come up. His contribution to the discussion would have been both learned and vigorous. He was always interested in public affairs, and at considerable sacrifice retained his citizenship in Boston during the last twenty years of his life. He could seldom vote here, but he took care that his name was kept on the voting list. He liked good company. With habits of mind fresh and almost boyish to the end of his life, he liked especially the society of the young. Young people in Washington spoke of his liveliness and the interest they found in his conversation.

He was married on June 4, 1889, to Jane, daughter of his late colleague, the Honorable Stanley Matthews, and the marriage was serenely happy. His parents were Congregationalists, and he was brought up in that communion. In middle life he attended the services at Trinity Church, Boston, whose rector, Phillips Brooks, was his friend. He was confirmed in the Protestant Episcopal Church at Washington, in 1889, and was thereafter a regular communicant. The strength of his religious feelings was manifested throughout his life in private and on every fitting public occasion; it may be judged by his commemoration of his colleagues in the Supreme Court of Massachusetts, Chief Justice Chapman and Justices Metcalf, Wells, and Colt, and by his oration on Chief Justice Marshall.

He was not a pioneer like Mansfield and Marshall, breaking out a way through regions of law hitherto untravelled; a pioneer comes hardly once in a century of our legal history: but for thirty-eight years he labored with success to make the crooked ways of the law straight and its rough places plain.

FRANCIS C. LOWELL.

WILLIAM SUMNER APPLETON.

WILLIAM SUMNER APPLETON was born in Boston January 11, 1840, and died in his native city April 28, 1903. He was the elder son of the Hon. Nathan Appleton, for nineteen years a Fellow of the Academy, and for three sessions a Representative in Congress from the Boston district, by his second wife, Harriot Coffin, daughter of Jesse Sumner, of Boston. On both his father's side and his mother's he was descended from ancestors who were among the first settlers of Massachusetts, Samuel Appleton at Ipswich and William Sumner at Dorchester. Of his father it was truly said, not long after his death, that he was "a merchant of large enterprise and unsullied integrity; a member of many learned societies; a writer of many able essays on commerce and currency; a wise and prudent counsellor in all private and public affairs; who had served with marked distinction in the legislative halls both of the State and of the nation, and who had enjoyed through life the esteem, respect, and confidence of the community in which he lived."* And in the equally just words of another: "Emphatically a merchant, his mind was not narrowed nor his heart contracted by the influence of a special calling. His inquiry and his information were extensive. Acquainted with political history and the principles of civil government, with all questions of national finance, with some branches of physical science, with Christian theology and biblical criticism, so far as was needful for the stability or the defence of his own faith, he was ready to communicate the fruits of his research for the benefit of others."† Such was the example which was set before young Appleton as he was growing up, and such the sturdy and sterling qualities which he afterward exhibited in his own life and character.

As a small boy he was sent to a boarding-school at Jamaica

* Memoir by Hon. Robert C. Winthrop in Proceedings of the Massachusetts Historical Society, vol. v. p. 250.

† Sermon preached July 21, 1861, the Sunday after the Funeral of the late Hon. Nathan Appleton, by Ezra S. Gannett, D.D., p. 17.

Plain, then kept by Mr. Cornelius M. Vinson, which had enjoyed a wide reputation under the management of Mr. Charles W. Greene, its first principal. He was fitted for college in the private Latin School of Mr. Epes S. Dixwell, who had recently resigned the head mastership of the Boston Latin School, and who was the most eminent classical teacher in this community. The thoroughness of his preparation was seen in his high rank in the first three years of his college course. He graduated in 1860 in the first half of his class, being entitled to a part at Commencement, a disquisition on "A Uniform Coinage." This assignment shows, as does his election to membership in the New England Historic-Genealogical Society, in February, 1859, while he was a Junior in college, at how early a period those tastes were developed which he afterward cultivated so assiduously and so successfully; and it is little matter for surprise that he did not gain the high distinction in college which might have been anticipated for him if his attention had not been diverted by other, and to him more fascinating, studies. In the year in which he graduated he was one of the founders of the Boston Numismatic Society, and he was its secretary from that time until his death. His interest in coins and medals dates back to his boyhood, and is mentioned in some of his earliest letters. This study never lost its attractiveness for him, and was pursued to the end of his life. At his death his collection, which was remarkable both for the beauty and the rarity of its specimens, included about twelve thousand coins and three thousand medals, the greater part of which he had himself catalogued with great minuteness. Besides being one of the original members of the Numismatic Society, he was one of the Publishing Committee of the American Journal of Numismatics from 1870 to 1891, and made many short communications to it. Closely akin to his interest in numismatics, and growing out of it, was his interest in heraldry, which he had thoroughly studied and well mastered. Probably no person on this side of the Atlantic had a more minute and more comprehensive knowledge of the subject; and his opinion on any question connected with it was wellnigh

conclusive. From 1865 to 1868 he was one of the Publishing Committee of the short-lived Heraldic Journal, and wrote much for it. In 1867, at the early age of twenty-seven, he was honored with an appointment as one of the commission to attend the annual assay of the United States Mint. It was a well-merited compliment, and reflected scarcely less honor on the administration which conferred it than it did on the recipient. From 1864 to 1872 he was one of the Publishing Committee of the New England Historical and Genealogical Register.

Immediately after graduating Mr. Appleton spent two months in travel in Canada and the Western States; and in April, 1862, he went abroad for the first of six visits to Europe, passing most of the summer and autumn in Great Britain, and reaching home at the end of November. Inheriting from his father, who died in 1861, and his mother, who died in 1867, an ample fortune, he had no need to pursue any gainful profession; but he nevertheless entered the Cambridge Law School, and graduated in July, 1865, with the degree of LL.B. Two weeks later he again sailed for Europe. He remained abroad a little more than a year, and travelled in France, Belgium, Holland, Germany, Switzerland, Austria, Turkey, Palestine, Egypt, Greece, and Italy. During a large part of this trip he had Phillips Brooks, afterward Bishop Brooks, as his travelling companion, and for four weeks in the Holy Land they rode side by side during the day, and slept every night in the same tent. In less than two years after his return, in June, 1868, he started for a journey around the world. Besides countries already mentioned he visited Ireland, Denmark, Sweden, Russia, Poland, Dalmatia, Montenegro, and Spain; and in January, 1869, he sailed from Marseilles for Bombay and the Far East. After travelling in Hindostan and visiting most of the accessible places of interest in the Philippines, China, and Japan, he reached home by the way of San Francisco in the autumn of 1869. While absent he was elected, in May, 1869, a member of the Massachusetts Historical Society; and for nearly thirty-four years, whether at home or abroad, he took a deep and

active interest in the work of the Society. In a letter to the writer of this memoir, from Pyrmont in June, 1887, he expressed a strong wish to have the serial parts of the Proceedings sent to him, and added: "It is a pleasure to keep up with the work of the Society, and there might chance occasionally to be a suggestion of something which one could do on this side the water."

In February and March, 1871, he visited the Southern States and Cuba. But this seems only to have increased his fondness for more distant travel; and in the following June he went again to Europe, remaining abroad rather more than a year. On this visit, August 12, 1871, he was married, at the United States Legation in Berne, Switzerland, to Edith Stuart, daughter of his cousin William Stuart Appleton, of Baltimore, Maryland. His eldest child, a daughter, was born in Paris, before his return to Boston.

The next four years were passed at home; and at the annual meeting of the Historical Society in April, 1873, he was elected a member of the Standing Committee. At the end of a year's service he was elected Cabinet-Keeper, which office he filled for six years. On the creation of the Record Commission of Boston, in 1875, he was appointed one of the two Commissioners, and he held this office, to which no salary was attached, until the Commission was abolished in July, 1892. As a Commissioner he edited the Ninth Report, "Boston Births, Baptisms, Marriages, and Deaths, 1630–1699"; the Twenty-first Report, "Dorchester Births, Deaths, and Marriages"; and the Twenty-fourth Report, "Boston Births, 1700–1800."

In November, 1876, he went to Europe for the fifth time, returning in June, 1877. During this visit he extended his travels to the islands of Sicily and Malta. After his return, in November, 1878, he was elected a Fellow of the American Academy of Arts and Sciences in Class III., Section II., Philology and Archæology. He never, however, contributed anything to the printed Transactions of the Academy.

After remaining at home for nearly nine years, actively engaged in his favorite pursuits, he sailed, in May, 1886, for

his last and longest visit to Europe, returning in June, 1889. Most of the time was passed in Germany, France, England, Belgium, Holland, and Italy; and for two successive summers he resided in the little town of Pyrmont, once a noted watering-place, in Germany, not far from Hanover, where he spent one winter. A little more than two years after his return, January 20, 1892, his wife died. The remainder of his life was spent quietly, a part of each year in a new house which he had built on Beacon Street, near Hereford Street, and a part on his large and beautiful estate near Oak Hill, Newton Centre. For a country life he acquired a genuine taste, and often spoke of his reluctance to come into town. He found a congenial occupation in cutting his own trees and overseeing the routine of a farmer's life.

In 1898 Mr. Appleton drew up a short paper which was found after his death in an envelope marked "Autobiographical Statement," and which begins as follows: "A short memoir of my life must be written for several Societies to which I belong, the most important perhaps being that for the Massachusetts Historical Society. I hope that in that one at least something may be printed to the following effect, being all that I care to leave in the form of an autobiographical statement." This paper is so characteristic of the writer that a biographer would find small excuse for not complying with so plain an injunction. With one or two unimportant omissions it is here given just as it was written: "It has been my fortune, or misfortune, to be generally in the minority. I have always belonged to a religious body which is small in acknowledged numbers, even if it has been, as I think, of far greater influence than mere figures would warrant; and in this body I seem at this date to be in a small minority, one of those who adhere to old-fashioned, conservative, Christian Unitarianism. I was an independent in politics long before the mugwump was imagined, and almost never voted a straight party ticket, but declined to allow my name to be brought before nominating conventions, republican and democratic. . . . I have alone voted *no* in a meeting of my class at Harvard, and

did not regret it. I was one of those who voted against the amendment which allows a pauper to be chosen Governor of the Commonwealth. I have always regretted the death of the Election Sermon and the murder of Fast Day. I am one of those, apparently few in this country, who think that things are not necessarily bad because old or old-fashioned, and therefore I deeply regret that Harvard's catalogue of her graduates is no longer printed in Latin. I am one of those who object to the naked boys over the door of Boston's Public Library, as poor in art, worse as part of a seal, and worst of all in their offensive vulgarity."

To this he added : "I claim the credit of the discovery of the two 'Candler' manuscripts in the Bodleian Library at Oxford, and the recognition of their value to American genealogists. I also claim the credit, at least equally with any other person, of first calling attention to the importance for American genealogists and families of the wills at Doctors' Commons, now Her Majesty's Principal Registry of Probate. . . . In 1885 I established the arms and seal of Harvard University, for which I received the formal thanks of the Corporation."

Filed with this statement was a copy of a clause in a will drawn up by him in June, 1868, before his marriage, "which circumstances happily kept from realization," and of which he very much wished mention should be made in any record of his life. By it he gave to fifteen trustees, most of whom are no longer living, "the sum of two hundred and fifty thousand dollars, together with my real estate lying on Commonwealth Avenue and Clarendon Street in said Boston, being two lots, — to be held by them in trust, and for such uses and purposes as are understood by the words 'Gallery of Art and School of Design,' and I desire that they should become and be a corporation of fifteen members, with power to fill any vacancies in their number, and that the consent and assent of nine should be necessary to any act in order to be binding; and that a suitable building be erected on the land in their hands at an expense not to exceed one hundred and twenty-five thousand

dollars. I also give them all works of art, such as paintings, which are in my possession, and which are not family memorials, and my wish and hope is, that such action should be taken by them as that the collection of works of art belonging to the Boston Athenæum should be permanently placed in the building to be erected by them. And my object in this bequest is to contribute as far as possible to the improvement and development of the Fine Arts in this country, to which end I earnestly desire the above-named trustees to labor in the exercise of this trust which I give to them, confiding in their ability and readiness to perform the same so that it may be a means of great benefit." * Before leaving this subject it may be proper to add that by his last will, dated April 25, 1902, Mr. Appleton gave in a certain remote contingency a very valuable and important part of his collection of medals and coins to the Historical Society; and in another more remote contingency he directed the trustees under his will to pay over specified sums to numerous literary, scientific, and charitable societies or institutions, among which were the Massachusetts Historical Society, the American Academy of Arts and Sciences, and the New England Historic-Genealogical Society.

Mr. Appleton's investigations in numismatics, heraldry, and genealogy, the studies which earliest and longest engaged his attention, were thorough, exact, and methodical. He was never satisfied until he had reached the final result; and in the case of the Sumner Genealogy he printed ten supplements. He never allowed himself to be deceived by pretentious claims to family antiquity and high descent based on no sufficient foundations; and he remorselessly pricked many bubble reputations. Besides his numerous contributions to the various periodicals of which he was either an editor or contributor, Mr. Appleton printed separately at least ten genealogies and other works. The earliest of these was an account, printed

* The will from which this is an extract was drawn up before the first movement for establishing the Museum of Fine Arts. That institution was not incorporated until February, 1870.

in 1867, of the "Ancestry of Mary Oliver," wife of Samuel Appleton, Jr., of Ipswich, son of the first immigrant, with an Appendix. His next publication was an elaborate account, printed in the following year, of the "Cranes of Chilton," from whom also he was descended. In the Introduction to it he makes a very characteristic statement, which shows how thorough and accurate was his work: "In preparing this record of a line of my own ancestry, I am glad to have an opportunity of showing the richness of genealogical material in England, and also the great difficulty of forming a sure and true pedigree. The Cranes of Chilton, though belonging to the gentry of the county of Suffolk, were by no means an important family in English history; yet I have been able to examine at least twenty manuscripts, giving a genealogy of this race, no one of which is free from mistake." This was followed two years afterward by a third contribution to his family genealogy, in a still larger volume on the "Ancestry of Priscilla Baker," wife of Isaac Appleton, of Ipswich. "The chief reason for printing this volume," he says in his Introduction, "is the opportunity which it gives of preparing better and fuller genealogies of the families of Symonds and Reade than can be found in any book which I have ever seen." It is a perfect storehouse of wills and other documents relating to the families mentioned. Next we have, in 1873 and 1874, two editions of the "Genealogy of the Appleton Family." Of these only a very small number of copies were printed, as a rough sketch of a larger Genealogy of the family in its various branches which it was his intention and hope to prepare, but which was left unfinished at his death. His largest and most important work in this field was the "Record of the Descendants of William Sumner, of Dorchester, Mass., 1636," published in 1879, and continued by supplementary leaflets almost to the last year of his life. After a considerable interval he printed, in 1893, an important collection of "Early Wills illustrating the Ancestry of Harriot Coffin, with Genealogical and Biographical Notes"; and this was followed in 1896 by "Gatherings toward a Genealogy of the Coffin Fam-

ily." In 1899 he prepared and printed a small pamphlet entitled "The Family of Armistead of Virginia." This embodied little original research, but was mainly an abridgment and rearrangement of a larger genealogy prepared by Lyon G. Tyler, President of William and Mary College, and printed in the Quarterly of that institution. "The reason of my own interest in the family," says Mr. Appleton, "appears in the sixth generation. I have therefore arranged in simple genealogical shape so much of the matter in the Quarterly as was necessary for the purpose," which was to trace his wife's ancestry. His last genealogical publication was issued a little more than a year before his death under the title of "Family Letters from the Bodleian Library, with Notes." The collection comprises thirty-six letters relating to the family of Appleton of Little Waldingfield, the immediate relatives of the immigrant to New England. An examination of these independent publications shows how persistent was the energy which he put into his genealogical researches, and fully justifies his reputation as a genealogist.

His wide travels had stored his mind with a fund of useful knowledge, and on many subjects he was an authority of the first rank. His interest in the broader aspects of history, it must be said, was subsidiary to his interest in his earlier studies, and his very numerous communications in the Proceedings of the Historical Society, which were usually quite short, were mainly illustrative of them. These communications need not be enumerated here; and it will be sufficient to mention two or three of the more important ones. The first of these, and one of the longest, was made in April, 1870, at a social meeting held at the house in Beacon Street, which had been the residence of his father and mother. He then exhibited a rare collection of coins and medals relating to America, and communicated a minute description of them which is printed in the eleventh volume of the Proceedings of the Society.

In March, 1895, he communicated a complete roll of the United States Senate for the first century of its existence,

with notes. This was a work of great labor and research, involving a vast amount of correspondence; and in the end he was able to ascertain the date and place of death of all the members, eight hundred and forty-eight in number, with only two exceptions. A separate edition was afterward published for sale. Two years later he read a short paper on the character and personal relations of the Whigs of Massachusetts during the period from 1840 to 1850. In February, 1898, after the sale of the Tremont Street estate, the stated meeting was held at his new house in Beacon Street, and the use of his parlors was offered to the Council for any other meetings which it might be convenient to hold there before the completion of the Society's new building. His last important contribution was in June, 1901, when he read a keen and searching paper on Heraldry in America.

Even a cursory examination of his contributions to the Proceedings of the Society indicates how great an interest he took in carrying on the work which its founders had in view, and what special fields of inquiry most attracted him. He never served on any Publishing Committee, and with the exception of one year on the Executive Committee and six years as Cabinet-Keeper he had no direct and avowed part in determining the policy of the Society; but few of the so-called working members did more or better work, in a quiet and unobtrusive way. His written style was clear, direct, and forceful, but it lacked that flexibility of expression which so often comes from constant practice, and in which specialists are so apt to be deficient. An ineffective delivery and an indistinctness of speech, especially in his later years, detracted much from the interest with which his papers and remarks were listened to; but their value was at once seen when written out in his clear and beautiful handwriting or transferred to the printed page.

Like his father, who printed late in life a correspondence with a clergyman of the Church of England on "The Doctrines of Original Sin and the Trinity," Mr. Appleton was a steadfast Unitarian of the older school — the school of Chan-

ning and Gannett — and looked with strong aversion on the latitudinarian tendencies which were creeping into the denomination. In 1896 he printed for private distribution a pamphlet entitled "Views of Unitarian Belief held by a Layman of Boston. Written for the Unitarian Club of Boston, but never read before it." It was a vigorous and outspoken statement of his theological opinions and of his total dissent from the then recent action of the National Conference of Unitarian Churches at Saratoga. He felt, as did many others, that the denomination had taken a further step backward from the high ground assumed at the formation of the Conference, thirty years before, in the city of New York. His earliest associations were with the "Federal Street meeting-house," where his father regularly worshipped; but after the removal of the congregation to Arlington Street, and later in life, he was an attendant at King's Chapel.

In his early years he was fond of dancing and social life. From 1864 to 1871 he was a member of the Independent Corps of Cadets, and for the last four years was in command of a company, with the rank of first lieutenant. After his wife's death he did not go much into society. In college he belonged to few if any of the undergraduate fraternities; but he was afterward a member of the Thursday Evening Club, which he frequently entertained at his house, and of the Union Club. He was also one of the founders of the Bostonian Society, an original member of the Eastern Yacht Club, and a member of the Boston Art Club, the Boston Society of Natural History, the Prince Society, the American Historical Association, and various other societies.

He had five children, a son and four daughters, all of whom were living at his death. To them he left an unsullied reputation, as did his father and a long line of honored ancestors on both sides of the Atlantic. To his associates in the societies in which he was an active worker, and especially to those who were brought into closest relation with him, he left a bright example of large and faithful service.

CHARLES C. SMITH.

JAMES ELLIOT CABOT.

Our late associate, Elliot Cabot, of whom I have been appointed to write a sketch, was to me from my college days an object of peculiar interest, on a variety of grounds. He was distantly related to me, in more than one way, through the endless intermarriages of the old Essex county families. Though two years and a half older, he was but one year in advance of me in Harvard College. He and his chum, Henry Bryant, who had been my schoolmate, were among the early founders of the Harvard Natural History Society, then lately established, of which I was an ardent member; and I have never had such a sensation of earthly glory as when I succeeded Bryant in the responsible function of Curator of Entomology in that august body. I used sometimes in summer to encounter Cabot in the Fresh Pond marshes, then undrained, which he afterwards described so delightfully in the "Atlantic Monthly" in his paper entitled "Sedge Birds" (XXIII. 384). On these occasions he bore his gun, and I only the humbler weapon of a butterfly net. After we had left college, I looked upon him with envy as one of the early and successful aspirants to that German post-collegiate education which was already earnestly desired, but rarely attained, by the more studious among Harvard graduates. After his return, I was brought more or less in contact with him, at the close of the "Dial" period, and in the following years of Transcendentalism; and, later still, I was actively associated with him for a time in that group of men who have always dreamed of accomplishing something through the Harvard Visiting Committee, and have retired from it with hopes unaccomplished. Apart from his labors as Emerson's scribe and editor, he seemed to withdraw himself more and more from active life as time went on, and to accept gracefully the attitude which many men find so hard, — that of being, in a manner, superseded by the rising generation. This he could do more easily, since he left a family of sons to represent in various forms the tastes and gifts that were combined in him; and he also left a manuscript autobiography, terse, simple, and modest, like himself, to represent what was in its way a quite unique career. Of this sketch I have been allowed to avail myself through the courtesy of his sons.

James Elliot Cabot was born in Boston, June 18, 1821, his birthplace being in Quincy Place, upon the slope of Fort Hill, in a house which had belonged to his grandfather, Samuel Cabot, brother of George Cabot, the well-known leader of the Federalists in his day. These brothers

belonged to a family originating in the island of Jersey and coming early to Salem, Mass. Elliot Cabot's father was also named Samuel, while his mother was the eldest child of Thomas Handasyd Perkins and Sarah Elliot; the former being best known as Colonel Perkins, who gave his house and grounds on Pearl Street toward the foundation of the Blind Asylum bearing his name, and also gave profuse gifts to other Boston institutions; deriving meanwhile his military title from having held command of the Boston Cadets. Elliot Cabot was, therefore, born and bred in the most influential circle of the little city of that date, and he dwelt in what was then the most attractive part of Boston, though long since transformed into a business centre.

His summers were commonly spent at Nahant, then a simple and somewhat primitive seaside spot, and his childhood was also largely passed in the house in Brookline built by Colonel Perkins for his daughter. Elliot Cabot went to school in Boston under the well-known teachers of that day, — Thayer, Ingraham, and Leverett. When twelve years old, during the absence of his parents in Europe, he was sent to a boarding-school in Brookline, but spent Saturday and Sunday with numerous cousins at the house of Colonel Perkins, their common grandfather, who lived in a large and hospitable manner, maintaining an ampler establishment than is to be found in the more crowded Boston of to-day. Personally he was a man of marked individuality, and I remember hearing from another of his grandchildren an amusing account of the scene which occurred, on one of these Sunday evenings, after the delivery of a total abstinence sermon by the Rev. Dr. Channing, of whom Colonel Perkins was one of the leading parishioners. The whole theory of total abstinence was then an absolute innovation, and its proclamation, which came rather suddenly from Dr. Channing, impressed Colonel Perkins much as it might have moved one of Thackeray's English squires; in so much that he had a double allowance of wine served out that evening to each of his numerous grandsons in place of their accustomed wine-glass of diluted beverage, and this to their visible disadvantage as the evening went on.

Elliot Cabot entered Harvard College in 1836 as Freshman, and though he passed his entrance examinations well, took no prominent rank in his class, but read all sorts of out-of-the-way books and studied natural history. He was also an early reader of Carlyle's "Sartor Resartus," then just published; and was, in general, quite disposed to pursue his own course in mental culture. He belonged to the Hasty Pudding Club and to the Porcellian Club, but spent much time with his

classmates Henry Bryant and William Sohier in shooting excursions, which had then the charm of being strictly prohibited by the college. The young men were obliged to carry their guns slung for concealment in two parts, the barrels separated from the stock, under their cloaks, which were then worn largely in the place of overcoats. This taste was strengthened by the love of Cabot's elder brother, afterwards Dr. Samuel Cabot, for ornithology; and as the latter was then studying medicine in Paris, the young men used to send him great numbers of specimens for purposes of exchange. Dr. Henry Bryant is well remembered in Boston for the great collection of birds given by him to the Boston Natural History Society.

Soon after his graduation, in 1840, Elliot Cabot went abroad with the object of joining his elder brother in Switzerland, visiting Italy, wintering in Paris, and returning home in the spring; but this ended in his going for the winter to Heidelberg instead, a place then made fascinating to all young Americans through the glowing accounts of it in Longfellow's "Hyperion." They were also joined by two other classmates, — Edward Holker Welch, now well known in the Roman Catholic priesthood, and John Fenwick Heath of Virginia, well remembered by the readers of Lowell's letters. All of these four were aiming at the profession of the law, although not one of them, I believe, finally devoted himself to its practice. Migrating afterwards to Berlin, after the fashion of German students, they were admitted to the University on their Harvard degrees by Ranke, the great historian, who said as he inspected their parchments, "Ah! the High School at Boston!" which they thought showed little respect for President Quincy's parchment, until they found that "Hoch Schule" was the German equivalent for University. There they heard the lectures of Schelling, then famous, whom they found to be a little man of ordinary appearance, old, infirm, and taking snuff constantly, as if to keep himself awake. Later they again removed, this time to Göttingen, where Cabot busied himself with the study of Kant, and also attended courses in Rudolph Wagner's laboratory. Here he shared more of the social life of his companions, frequented their Liederkränze, learned to fence and to dance, and spent many evenings at students' festivals.

Cabot sums up his whole European reminiscences as follows: "As I look back over my residence in Europe, what strikes me is the waste of time and energy from having had no settled purpose to keep my head steady. I seem to have been always well employed and happy, but I had been indulging a disposition to mental sauntering, and the picking

up of scraps, very unfavorable to my education. I was, I think, naturally inclined to hover somewhat above the solid earth of practical life, and thus to miss its most useful lessons. The result I think was to confirm me in the vices of my mental constitution and to cut off what chance there was of my accomplishing something worth while."

In March, 1843, he finally left Göttingen for home by way of Belgium and England, and entered the Harvard Law School in the autumn, taking his degree there two years later, in 1845. Renewing acquaintance with him during this period, I found him to be, as always, modest and reticent in manner, bearing unconsciously a certain European prestige upon him which so commanded the respect of a circle of young men that we gave him the sobriquet of "Jarno," after the well-known philosophic leader in Goethe's "Wilhelm Meister." Whatever he may say of himself, I cannot help still retaining somewhat of my old feeling about the mental training of the man, who, while in the Law School, could write a paper so admirable as Cabot's essay entitled "Immanuel Kant" (Dial, IV. 409), an essay which seems to me now, as it then seemed, altogether the simplest and most effective statement I have ever encountered of the essential principles of that great thinker's philosophy. I remember that when I told Cabot that I had been trying to read Kant's "Critique of Pure Reason" in an English translation, but could not understand it, he placidly replied that he had read it twice in German and had thought he comprehended it, but that Meiklejohn's translation was beyond making out, so that I need not be discouraged.

After graduating from the Law School, he went for a year into a law office in Boston, acting as senior partner to my classmate, Francis Edward Parker, who, being a born lawyer, as Cabot was not, found it for his own profit to sever the partnership at the end of a year, while Cabot retired from the profession forever. His German training had meanwhile made him well known to the leaders of a new literary enterprise, originating with Theodore Parker and based upon a meeting at Mr. Emerson's house in 1849, the object being the organization of a new magazine which should be, in Theodore Parker's phrase, "the Dial with a beard." Liberals and reformers were present at the meeting, including men so essentially diverse as Sumner and Thoreau. Parker was, of course, to be the leading editor, and became such. Emerson also consented, "rather weakly," as Cabot says in his memoranda, to appear, and contributed only the introductory address, while Cabot himself agreed to act as corresponding secretary and business manager. The "Massachusetts Quarterly Review" sustained itself with difficulty for three years, — showing

more of studious and systematic work than its predecessor the "Dial," but far less of freshness and originality, — and then went under.

A more successful enterprise in which he was meanwhile enlisted was a trip to Lake Superior with Agassiz, in 1850, when Cabot acted as secretary and wrote and illustrated the published volume of the expedition, — a book which was then full of fresh novelties, and which is still very readable. Soon after his return, he went into his brother Edward's architect office in Boston to put his accounts in order, and ultimately became a partner in the business, erecting various buildings.

He was married on Sept. 28, 1857, to Elizabeth Dwight, daughter of Edmund Dwight, Esq., a woman of rare qualities and great public usefulness, who singularly carried on the tradition of those Essex County women of an earlier generation, who were such strong helpmates to their husbands. Of Mrs. Cabot it might almost have been said what was said by John Lowell in 1826 of his cousin Elizabeth Higginson, wife of her double-first cousin, George Cabot: "She had none of the advantages of early education afforded so bountifully to the young ladies of the present age; but she surpassed *all* of them in the acuteness of her observation, in the knowledge of human nature, and in her power of expressing and defending the opinions which she had formed." * Thus Elliot Cabot writes of his wife: "From the time when the care of her children ceased to occupy the most of her time, she gradually became one of the most valuable of the town officials, as well as the unofficial counsellor of many who needed the unfailing succor of her inexhaustible sympathy and practical helpfulness."

Cabot visited Europe anew after his marriage, and after his return served for nine years as a school committee-man in Brookline, where he resided. He afterwards did faithful duty for six years as chairman of the examining committee of Harvard Overseers. He gave for a single year a series of lectures on Kant at Harvard University, and for a time acted as Instructor in Logic there, which included a supervision of the forensics or written discussions then in vogue. The Civil War aroused his sympathies strongly, especially when his brother Edward and his personal friend Francis L. Lee became respectively Colonel and Lieutenant-colonel of the 44th Massachusetts Volunteer Infantry. Elliot Cabot himself enlisted in a drill club, and did some work for the Sanitary Commission. He also assisted greatly in organizing the Museum of Fine Arts and in the administration of the Boston Athenaeum.

* Lodge's Cabot, p. 12, note.

Though a life-long student, he wrote little for the press, — a fact which recalls Theodore Parker's remark about him that he "could make a good law argument, but could not address it to the jury." He rendered, however, a great and permanent service, far outweighing that performed by most American authors of his time, as volunteer secretary to Ralph Waldo Emerson, a task which constituted his main occupation for five or six years. After Emerson's death, Cabot also wrote his memoirs, by the wish of the family, — a book which will always remain the primary authority on the subject with which it deals, although it was justly criticised by others for a certain restricted tone which made it seem to be, as it really was, the work of one shy and reticent man telling the story of another. In describing Emerson the biographer often unconsciously described himself also; and the later publications of Mr. Emerson's only son show clearly that there was room for a more ample and varied treatment in order to complete the work.

Under these circumstances Cabot's home life, while of even tenor, was a singularly happy one. One of his strongest and life-long traits was his love of children, — a trait which he also eminently shared with Emerson. The group formed by him with two grandchildren in his lap, to whom he was reading John Gilpin or Hans Andersen, is one which those who knew him at home would never forget. It was characteristic also that in his German copy of Kant's "Critique of Pure Reason," already mentioned, there were found some papers covered with drawings of horses and carts which had been made to amuse some eager child. Akin to this was his strong love of flowers, united with a rare skill in making beautiful shrubs grow here and there in such places as would bring out the lines and curves of his estate at Beverly. Even during the last summer of his life he was cutting new little vistas on the Beverly hills. His sketches of landscape in water-color were also very characteristic both of his delicate and poetic appreciation of nature and of his skill and interest in drawing. In 1885, while in Italy, he used to draw objects seen from the car window as he travelled; and often in the morning, when his family came down to breakfast at hotels, they found that he had already made an exquisite sketch in pencil of some tower or arch.

His outward life, on the whole, seemed much akin to the lives led by that considerable class of English gentlemen who adopt no profession, dwelling mainly on their paternal estates, yet are neither politicians nor fox hunters; pursuing their own favorite studies, taking part from time to time in the pursuits of science, art, or literature, even holding minor public functions, but winning no widespread fame. He showed, on the

other hand, the freedom from prejudice, the progressive tendency, and the ideal proclivities which belong more commonly to Americans. He seemed to himself to have accomplished nothing; and yet he had indirectly aided a great many men by the elevation of his tone and the breadth of his intellectual sympathy. If he did not greatly help to stimulate the thought of his time, he helped distinctly to enlarge and ennoble it. His death occurred at Brookline on Jan. 16, 1903. He died as he had lived, a high-minded, stainless, and in some respects unique type of American citizen.

ALFRED PERKINS ROCKWELL.

THE death of Alfred Perkins Rockwell removes one more of the few remaining men who, just entering upon a scientific career, dropped all personal aims at the first call of his country. Fortunately General Rockwell was able to re-enter his chosen profession as professor of mining at the Sheffield Scientific School, where he had been a student after his graduation from Yale University in 1855. In 1868 he was called to the same chair at the Massachusetts Institute of Technology, where he contributed not a little to the success of that department.

Instruction in mining in this country was at that time largely descriptive, by lectures, since laboratory methods were not then developed.

General Rockwell's administrative ability was soon more fully utilized as chief of the fire department of the city of Boston after the great fire of 1872, and subsequently as president of the Eastern Railroad Company. To these civic duties he brought the same high standard of duty, the same loyalty to the right, the same power of organization, which brought him during three years of the civil war from a volunteer second lieutenant to brevet brigadier general. Good judgment in placing his forces and courage in leading them to success characterized his services in these positions. While only a captain he was commended by three generals on three occasions within a year.

The Massachusetts Commandery of the Military Order of the Loyal Legion showed its regard for the man and its appreciation of his services by electing him to its council in 1870 and 1871, as its senior vice-commander in 1877, and as its commander in 1878.

His paper on the "Operations against Charleston, 1860," contributed to the Military Historical Society of Massachusetts, and his careful and

scholarly editing of Volumes III and IV of its Memoirs, bear witness to the use he made of the greater leisure of later years.

General Rockwell was a member not only of this society, but of the Geological Society of France, the Boston Natural History Society, the American Association for the Advancement of Science, and of various social clubs in Boston.

His relations with his fellow men were marked by a dignity of manner, a self-respecting modesty, and his cheerful disposition made him a welcome member of the various societies to which he belonged.

Born in Norwich, Conn., Oct. 15, 1834, he died suddenly at New Haven on Dec. 24, 1903. The funeral services were held at Trinity Church, Boston, December 28.

HORATIO HOLLIS HUNNEWELL.

HORATIO HOLLIS HUNNEWELL was elected a resident Fellow of the Academy, May 28, 1872, in class 2, section 2 (botany). He died on May 20, 1902. He was born in Watertown, Massachusetts, on July 27, 1810, and was the son of Walter Hunnewell, of the fifth generation of the New England Hunnewells, a graduate of the Harvard class of 1787, and a physician of standing highly respected in the community, and of Susanna Cooke.

Adeline Fowl, a niece of Mrs. Walter Hunnewell, still remembered for her beauty and charm of manner, had married Samuel Welles, the head of the Paris banking-house of Welles & Company. At the suggestion of Mrs. Welles young Hunnewell was sent to Paris at the age of fifteen to learn the banking business in her husband's house. He applied himself to this with such assiduity that at the end of ten years he was admitted a partner in the bank and married a daughter of John Welles of Boston, a cousin of Samuel Welles. Mr. Hunnewell's career now seemed assured, and he looked forward with complacency to passing his life in Paris in the active pursuit of business, but the financial crisis of 1837 destroyed credits and compelled the winding up of the affairs of John Welles & Company. During the Revolution of 1830 Mr. Hunnewell, as a member of the *Garde Nationale*, carried a musket and helped protect his employer's bank. Nearly seventy years later he was gratified by receiving from the Government of France a medal commemorating his services as a soldier.

Mr. Hunnewell returned to Boston disappointed, and, as he acknowledged later, nearly broken-hearted. His optimism, the strong feature of his character, soon asserted itself, however, and he began at once to make a position for himself in the business community. His industry, broad-mindedness, and astuteness, and his confidence in the future of the country, soon brought him success and the attention of the group of Boston capitalists who during the last half of the nineteenth century made this city an important factor in the development of the West. By these men Mr. Hunnewell's advice was sought and respected, and with them he acquired in building railroads and in other enterprises great wealth and filled many positions of responsibility.

Soon after his return from France, Mr. Hunnewell became actively interested in horticulture, and for the remainder of his life he devoted a large part of his time to the improvement of the estate in Natick which had belonged to his wife's family and which has given the name of Wellesley to a town later separated from Natick. This estate Mr. Hunnewell lived to see one of the most famous and interesting in America. He seems to have inherited his love of flowers from his father, whose garden in Watertown was the most attractive in the town: for the love of gardening, which was the passion of his later years, showed itself early, and this man of great affairs boasted only of his first financial transaction, — the successful sale of a number of young cherry-trees which he had grafted as a boy just before he went to France. Gardening taught Mr. Hunnewell the value of experiment and the importance of science. It led him to test trees and other plants not previously introduced into New England, and our knowledge of the value in this climate of many plants, especially coniferous trees, is based largely on his experiments at Wellesley. As a horticulturist Mr. Hunnewell's most useful work was the formation of his collection of coniferous trees, which now contains the best specimens of several species to be found in this country and which is one of the largest and the most interesting in America, and his experiments in the cultivation of rhododendrons, which have now become common garden plants in this part of the country through knowledge obtained first at Wellesley.

His appreciation of the importance of science as a basis for good gardening was shown in our associate's long-sustained support of the botanical departments of Harvard University. For twenty years he was an active member of the Visiting Committee of the Botanic Garden and a generous contributor to the expenses of the Garden and the

Botanical Museum at Cambridge. His interest in the Arnold Arboretum began with the inception of that undertaking and ceased only with his life. He was one of the largest benefactors of the Arboretum, where the Hunnewell Building is a witness of his interest in increasing the knowledge of trees. One of the last acts of his life was to endow the Botanical Department of Wellesley College.

For forty-five years Mr. Hunnewell was an active member of the Massachusetts Horticultural Society, rendering it valuable service for thirty-four years as a member of its Finance Committee, during nineteen of which he was Chairman of that important Committee, and as Vice-President for eleven years. Much of the success of this Society is due to his wise management of its finances and his unfailing interest in its exhibitions. For twenty-six years Mr. Hunnewell served the Massachusetts Humane Society as a Trustee, and for five years as its President. His liberality was not confined to the advancement of botany and horticulture. No appeal in behalf of a worthy object was made to him in vain. In Wellesley a public library, a town hall, and a public park are monuments to his public spirit. The Public Library in his native town and the hospitals and the Museum of Fine Arts in Boston shared in his success.

Simple in tastes, unassuming, modest and retiring, hospitable without ostentation, of broad sympathies, interested to the end in all that interested three generations of his descendants, happy with his trees and with his flowers, which never failed to delight him, happiest in making others happy, loved and respected by old and young, our associate lived wisely, and in his life gave an example of public spirit, enterprise, generosity, and kindliness of high value to the community. To those who knew him the recollection of this friend is a delight and an inspiration.

C. S. Sargent.

American Academy of Arts and Sciences.

OFFICERS AND COMMITTEES FOR 1904-05.

PRESIDENT.

WILLIAM W. GOODWIN.

VICE-PRESIDENT.

Class I.	Class II.	Class III.
JOHN TROWBRIDGE,	HENRY P. WALCOTT,	JOHN C. GRAY.

CORRESPONDING SECRETARY.

EDWIN H. HALL.

RECORDING SECRETARY.

WILLIAM WATSON.

TREASURER.

FRANCIS BLAKE.

LIBRARIAN.

A. LAWRENCE ROTCH.

COUNCILLORS.

Class I.	Class II.	Class III.
ARTHUR G. WEBSTER,	EDWARD L. MARK, *Terms expire* 1905.	ARLO BATES,
LEWIS J. JOHNSON,	EDWARD H. BRADFORD, *Terms expire* 1906.	MORRIS H. MORGAN,
ELIHU THOMSON,	WILLIAM T. SEDGWICK, *Terms expire* 1907.	JOHN H. WRIGHT.

COMMITTEE OF FINANCE.

WILLIAM W. GOODWIN, FRANCIS BLAKE, ELIOT C. CLARKE.

RUMFORD COMMITTEE.

CHARLES R. CROSS, *Chairman*,

ERASMUS D. LEAVITT,	EDWARD C. PICKERING,	AMOS E. DOLBEAR,
ARTHUR G. WEBSTER,	THEODORE W. RICHARDS,	ELIHU THOMSON.

C. M. WARREN COMMITTEE.

LEONARD P. KINNICUTT, *Chairman*,

ROBERT H. RICHARDS,	SAMUEL CABOT,	ARTHUR M. COMEY,
ARTHUR MICHAEL.	HENRY P. TALBOT,	CHARLES R. SANGER.

COMMITTEE OF PUBLICATION.

EDWARD L. MARK, of Class II., *Chairman*,

SETH C. CHANDLER, of Class I., CRAWFORD H. TOY, of Class III.

COMMITTEE ON THE LIBRARY.

A. LAWRENCE ROTCH, *Chairman*,

HARRY M. GOODWIN, of Class I., SAMUEL HENSHAW, of Class II.,

HENRY W. HAYNES, of Class III.

AUDITING COMMITTEE.

HENRY G. DENNY, FREDERICK J. STIMSON.

LIST

OF THE

FELLOWS AND FOREIGN HONORARY MEMBERS.

(Corrected to June 30, 1904.)

RESIDENT FELLOWS. — 199.

(Number limited to two hundred.)

Class I. — *Mathematical and Physical Sciences.* — 79.

Section I. — 18.

Mathematics and Astronomy.

Solon I. Bailey,	Cambridge.
Maxime Bôcher,	Cambridge.
William E. Byerly,	Cambridge.
Seth C. Chandler,	Cambridge.
Gustavus Hay,	Boston.
Percival Lowell,	Boston.
James Mills Peirce,	Cambridge.
Edward C. Pickering,	Cambridge.
William H. Pickering,	Cambridge.
Henry S. Pritchett,	Boston.
John Ritchie, Jr.,	Roxbury.
Edwin F. Sawyer,	Brighton.
Arthur Searle,	Cambridge.
William E. Story,	Worcester.
Henry Taber,	Worcester.
Harry W. Tyler,	Boston.
O. C. Wendell,	Cambridge.
P. S. Yendell,	Dorchester.

Section II. — 24.

Physics.

A. Graham Bell,	Washington, D.C.
Clarence J. Blake,	Boston.
Francis Blake,	Weston.
George A. Campbell,	Boston.
Harry E. Clifford,	Newton.
Charles R. Cross,	Brookline.
Amos E. Dolbear,	Somerville.
A. W. Duff,	Worcester.
H. M. Goodwin,	Roxbury.
Edwin H. Hall,	Cambridge.
Hammond V. Hayes,	Cambridge.
William L. Hooper,	Somerville.
William W. Jacques,	Newton.
Frank A. Laws,	Boston.
Henry Lefavour,	Boston.
Theodore Lyman,	Brookline.
Benjamin O. Peirce,	Cambridge.
A. Lawrence Rotch,	Boston.
Wallace C. Sabine,	Boston.
John S. Stone,	Boston.
Elihu Thomson,	Swampscott.
John Trowbridge,	Cambridge.
A. G. Webster,	Worcester.
Robert W. Willson,	Cambridge.

Section III. — 21.

Chemistry.

Samuel Cabot,	Boston.

Arthur M. Comey,	Cambridge.
James M. Crafts,	Boston.
Charles W. Eliot,	Cambridge.
Charles L. Jackson,	Cambridge.
Walter L. Jennings,	Worcester.
Leonard P. Kinnicutt,	Worcester.
Charles F. Mabery,	Cleveland, O.
Arthur Michael,	Boston.
George D. Moore,	Worcester.
Charles E. Munroe,	Wash'gton, D.C.
John U. Nef,	Chicago, Ill.
Arthur A. Noyes,	Boston.
Robert H. Richards,	Jamaica Plain.
Theodore W. Richards,	Cambridge.
Charles R. Sanger,	Cambridge.
Stephen P. Sharples,	Cambridge.
Francis H. Storer,	Boston.
Henry P. Talbot,	Newton.
Charles H. Wing,	Ledger, N. C.
Edward S. Wood,	Boston.

SECTION IV. — 16.

Technology and Engineering.

Alfred E. Burton,	Boston.
Eliot C. Clarke,	Boston.
Heinrich O. Hofman,	Jamaica Plain.
Ira N. Hollis,	Cambridge.
L. J. Johnson,	Cambridge.
Gaetano Lanza,	Boston.
E. D. Leavitt,	Cambridge.
William R. Livermore,	New York.
Hiram F. Mills,	Lowell.
Cecil H. Peabody,	Brookline.
Andrew H. Russell,	Manila.
Albert Sauveur,	Cambridge.
Peter Schwamb,	Arlington.
H. L. Smyth,	Cambridge.
George F. Swain,	Boston.
William Watson,	Boston.

CLASS II. — *Natural and Physiological Sciences.* — 68.

SECTION I. — 15.

Geology, Mineralogy, and Physics of the Globe.

H. H. Clayton,	Milton.
Algernon Coolidge,	Boston.
William O. Crosby,	Jamaica Plain.
William M. Davis,	Cambridge.
Benj. K. Emerson,	Amherst.
O. W. Huntington,	Newport, R. I.
Robert T. Jackson,	Cambridge.
T. A. Jaggar, Jr.,	Cambridge.
William H. Niles,	Cambridge.
Charles Palache,	Cambridge.
John E. Pillsbury,	Boston.
Nathaniel S. Shaler,	Cambridge.
Robert DeC. Ward,	Cambridge.
John E. Wolff,	Cambridge.
J. B. Woodworth,	Cambridge.

SECTION II. — 12.

Botany.

F. S. Collins,	Malden.
Geo. E. Davenport,	Medford.
William G. Farlow,	Cambridge.
Charles E. Faxon,	Jamaica Plain.
Merritt L. Fernald,	Cambridge.
William F. Ganong,	Northampton.
George L. Goodale,	Cambridge.
John G. Jack,	Jamaica Plain.
B. L. Robinson,	Cambridge.
Charles S. Sargent,	Brookline.
Arthur B. Seymour,	Cambridge.
Roland Thaxter,	Cambridge.

SECTION III. — 25.

Zoölogy and Physiology.

Alexander Agassiz,	Cambridge.
Robert Amory,	Boston.

James M. Barnard,	Milton.
Henry P. Bowditch,	Jamaica Plain.
William Brewster,	Cambridge.
Louis Cabot,	Brookline.
William E. Castle,	Cambridge.
Samuel F. Clarke,	Williamstown.
W. T. Councilman,	Boston.
Charles B. Davenport,	Chicago, Ill.
Harold C. Ernst,	Jamaica Plain.
Edward G. Gardiner,	Boston.
Samuel Henshaw,	Cambridge.
Theodore Hough,	Boston.
John S. Kingsley,	Somerville.
Edward L. Mark,	Cambridge.
Charles S. Minot,	Milton.
Edward S. Morse,	Salem.
George H. Parker,	Cambridge.
William T. Porter,	Boston.
James J. Putnam,	Boston.
Samuel H. Scudder,	Cambridge.
William T. Sedgwick,	Boston.
James C. White,	Boston.
William M. Woodworth,	Cambridge.

SECTION IV. — 16.

Medicine and Surgery.

Samuel L. Abbot,	Boston.
Edward H. Bradford,	Boston.
Arthur T. Cabot,	Boston.
David W. Cheever,	Boston.
Frank W. Draper,	Boston.
Thomas Dwight,	Nahant.
Reginald H. Fitz,	Boston.
Charles F. Folsom,	Boston.
Frederick I. Knight,	Boston.
Samuel J. Mixter,	Boston.
W. L. Richardson,	Boston.
Theobald Smith,	Jamaica Plain.
O. F. Wadsworth,	Boston.
Henry P. Walcott,	Cambridge.
John C. Warren,	Boston.
Francis H. Williams,	Boston.

CLASS III. — *Moral and Political Sciences.* — 52.

SECTION I. — 10.

Philosophy and Jurisprudence.

James B. Ames,	Cambridge.
John C. Gray,	Boston.
G. Stanley Hall,	Worcester.
Geo. F. Hoar,	Worcester.
Francis C. Lowell,	Boston.
Hugo Münsterberg,	Cambridge.
Josiah Royce,	Cambridge.
Jeremiah Smith,	Cambridge.
Frederic J. Stimson,	Dedham.
Edward H. Strobel,	Cambridge.

SECTION II. — 22.

Philology and Archæology.

Charles P. Bowditch,	Jamaica Plain.
Lucien Carr,	Cambridge.
Franklin Carter,	Williamstown.
Joseph T. Clarke,	Boston.
Henry G. Denny,	Roxbury.
William Everett,	Quincy.
J. W. Fewkes,	Washington, D.C.
William W. Goodwin,	Cambridge.
Henry W. Haynes,	Boston.
Charles R. Lanman,	Cambridge.
David G. Lyon,	Cambridge.
Morris H. Morgan,	Cambridge.
Bennett H. Nash,	Boston.
Frederick W. Putnam,	Cambridge.
Edward Robinson,	Boston.
Edward S. Sheldon,	Cambridge.
Herbert Weir Smyth,	Cambridge.
F. B. Stephenson,	Boston.
Crawford H. Toy,	Cambridge.
John W. White,	Cambridge.
John H. Wright,	Cambridge.
Edward J. Young,	Waltham.

SECTION III. — 10.

Political Economy and History.

Charles F. Adams,	Lincoln.
Edward Atkinson,	Brookline.
Andrew McF. Davis,	Cambridge.
Ephraim Emerton,	Cambridge.
A. C. Goodell,	Salem.
Henry C. Lodge,	Nahant.
A. Lawrence Lowell,	Boston.
James F. Rhodes,	Boston.
Charles C. Smith,	Boston.
F. W. Taussig,	Cambridge.

SECTION IV. — 10.

Literature and the Fine Arts.

Francis Bartlett,	Boston.
John Bartlett,	Cambridge.
Arlo Bates,	Boston.
George S. Boutwell,	Groton.
T. W. Higginson,	Cambridge.
George L. Kittredge,	Cambridge.
Charles Eliot Norton,	Cambridge.
Denman W. Ross,	Cambridge.
William R. Ware,	Milton.
Barrett Wendell,	Boston.

ASSOCIATE FELLOWS. — 100.

(Number limited to one hundred. Elected as vacancies occur.)

CLASS I. — *Mathematical and Physical Sciences.* — 37.

SECTION I. — 14.

Mathematics and Astronomy.

Edward E. Barnard,	Williams Bay,
S. W. Burnham,	Chicago. [Wis.
George Davidson,	San Francisco.
Fabian Franklin,	Baltimore.
Asaph Hall,	Goshen, Conn.
George W. Hill,	W. Nyack, N.Y.
E. S. Holden,	New York.
Emory McClintock,	Morristown, N.J.
E. H. Moore,	Chicago.
Simon Newcomb,	Washington.
Charles L. Poor,	New York.
George M. Searle,	Washington.
J. N. Stockwell,	Cleveland, O.
Chas. A. Young,	Princeton, N. J.

SECTION II. — 6.

Physics.

Carl Barus,	Providence, R.I.
G. E. Hale,	Williams Bay, Wis.
S. P. Langley,	Washington.
T. C. Mendenhall,	
A. A. Michelson,	Chicago.
E. L. Nichols,	Ithaca, N. Y.

SECTION III. — 9.

Chemistry.

T. M. Drown,	So. Bethlehem, Pa.
Wolcott Gibbs,	Newport, R.I.
Frank A. Gooch,	New Haven.
Eugene W. Hilgard,	Berkeley, Cal.
S. W. Johnson,	New Haven.
J. W. Mallet,	Charlottesville, Va.
E. W. Morley,	Cleveland, O.
J. M. Ordway,	New Orleans.
Ira Remsen,	Baltimore.

SECTION IV. — 8.

Technology and Engineering.

Henry L. Abbot,	Cambridge.
Cyrus B. Comstock,	New York. [Va.
W. P. Craighill,	Charlestown, W.
John Fritz,	Bethlehem, Pa.
James D. Hague,	New York.
F. R. Hutton,	New York.
William Sellers,	Edge Moor, Del.
Robt. S. Woodward,	New York.

CLASS II. — *Natural and Physiological Sciences.* — 34.

SECTION I. — 11.

Geology, Mineralogy, and Physics of the Globe.

Cleveland Abbe,	Washington.
George J. Brush,	New Haven.
T. C. Chamberlin,	Chicago.
Edward S. Dana,	New Haven.
Walter G. Davis,	Cordova, Arg.
Samuel F. Emmons,	Washington.
G. K. Gilbert,	Washington.
S. L. Penfield,	New Haven.
R. Pumpelly,	Newport, R.I.
Israel C. Russell,	Ann Arbor.
Charles D. Walcott,	Washington.

SECTION II. — 6.

Botany.

L. H Bailey,	Ithaca, N. Y.
D. H. Campbell,	Palo Alto, Cal.
J. M. Coulter,	Chicago.
C. G. Pringle,	Charlotte, Vt.
John D. Smith,	Baltimore.
W. Trelease,	St. Louis.

SECTION III. — 9.

Zoölogy and Physiology.

Joel A. Allen,	New York.
W. K. Brooks,	Lake Roland, Md.
F. P. Mall,	Baltimore.
S. Weir Mitchell,	Philadelphia.
H. F. Osborn,	New York.
A. S. Packard,	Providence, R.I.
A. E. Verrill,	New Haven.
C. O. Whitman,	Chicago.
E. B. Wilson,	New York.

SECTION IV. — 8.

Medicine and Surgery.

John S. Billings,	New York.
W. S. Halsted,	Baltimore.
Abraham Jacobi,	New York.
W. W. Keen,	Philadelphia
William Osler,	Baltimore.
T. Mitchell Prudden,	New York.
Wm. H. Welch,	Baltimore.
H. C. Wood,	Philadelphia.

CLASS III. — *Moral and Political Sciences.* — 29.

SECTION I. — 7.

Philosophy and Jurisprudence.

James C. Carter,	New York.
Joseph H. Choate,	New York.
Melville W. Fuller,	Washington.
William W. Howe,	New Orleans.
Charles S. Peirce,	Milford, Pa.
G. W. Pepper,	Philadelphia.
T. R. Pynchon,	Hartford, Conn.

SECTION II. — 7.

Philology and Archæology.

Timothy Dwight,	New Haven.
B. L. Gildersleeve,	Baltimore.
D. C. Gilman,	Baltimore.
T. R. Lounsbury,	New Haven.
Rufus B. Richardson,	Athens.
Thomas D. Seymour,	New Haven.
A. D. White,	Ithaca, N.Y.

SECTION III. — 7.

Political Economy and History.

Henry Adams,	Washington.
G. P. Fisher,	New Haven.
Arthur T. Hadley,	New Haven.
Henry C. Lea,	Philadelphia.
Alfred T. Mahan,	New York.
H. Morse Stephens,	Ithaca.
W. G. Sumner,	New Haven.

SECTION IV. — 8.

Literature and the Fine Arts.

James B. Angell,	Ann Arbor, Mich.
L. P. di Cesnola,	New York.
H. H. Furness,	Wallingford, Pa.
R. S. Greenough,	Florence.
Herbert Putnam,	Washington.
Augustus St. Gaudens,	Windsor, Vt.
John S. Sargent,	London.
E. C. Stedman,	Bronxville, N. Y.

FOREIGN HONORARY MEMBERS. — 73.

(Number limited to seventy-five. Elected as vacancies occur.)

Class I. — *Mathematical and Physical Sciences.* — 25.

Section I. — 8.

Mathematics and Astronomy.

Arthur Auwers,	Berlin.
George H. Darwin,	Cambridge.
Sir William Huggins,	London.
Felix Klein,	Göttingen.
Émile Picard,	Paris.
H. Poincaré,	Paris.
Otto Struve,	Karlsruhe.
H. C. Vogel,	Potsdam.

Section II. — 6.

Physics.

Ludwig Boltzmann,	Leipsic.
Oliver Heaviside,	Newton Abbot.
F. Kohlrausch,	Berlin.
Joseph Larmor,	Cambridge.
Lord Rayleigh,	Witham.
Joseph J. Thomson,	Cambridge.

Section III. — 6.

Chemistry.

Adolf Ritter von Baeyer,	Munich
Marcellin Berthelot,	Paris.
J. H. van't Hoff,	Berlin.
D. Mendeleeff,	St. Petersburg.
Sir H. E. Roscoe,	London.
Julius Thomsen,	Copenhagen.

Section IV. — 5.

Technology and Engineering.

Sir Benjamin Baker,	London.
Lord Kelvin,	Largs.
Maurice Lévy,	Paris.
H. Müller-Breslau,	Berlin.
W. Cawthorne Unwin,	London.

Class II. — *Natural and Physiological Sciences.* — 25.

Section I. — 6.

Geology, Mineralogy, and Physics of the Globe.

Sir Archibald Geikie,	London.
Julius Hann,	Vienna.
Albert Heim,	Zurich.
Sir John Murray,	Edinburgh.
Freih. v. Richthofen,	Berlin.
Henry C. Sorby,	Sheffield.

Section II. — 6.

Botany.

E. Bornet,	Paris.
A. Engler,	Berlin.
Sir Joseph D. Hooker,	Sunningdale.
W. Pfeffer,	Leipsic.
H. Graf zu Solms-Laubach,	Strassburg.
Eduard Strasburger,	Bonn.

SECTION III. — 6.

Zoölogy and Physiology.

Sir Michael Foster,	Cambridge.
Ludimar Hermann,	Königsberg.
A. von Kölliker,	Würzburg.
H. Kronecker,	Bern.
E. Ray Lankester,	London.
Elias Metschnikoff,	Paris.

SECTION IV. — 7.

Medicine and Surgery.

Emil von Behring,	Marburg.
Sir T. L. Brunton,	London.
A. Celli,	Rome.
Sir V. A. H. Horsley,	London.
R. Koch,	Berlin.
Lord Lister,	London.
F. v. Recklinghausen,	Strassburg.

CLASS III. — *Moral and Political Sciences.* — 23.

SECTION I. — 5.

Philosophy and Jurisprudence.

A. J. Balfour,	Prestonkirk.
Heinrich Brunner,	Berlin.
A. V. Dicey,	Oxford.
F. W. Maitland,	Cambridge.
Sir Frederick Pollock, Bart.,	London.

SECTION II. — 7.

Philology and Archæology.

Ingram Bywater,	Oxford.
F. Delitzsch,	Berlin.
W. Dörpfeld,	Athens.
Sir John Evans,	Hemel Hempstead.
H. Jackson,	Cambridge.
J. W. A. Kirchhoff,	Berlin.
G. C. C. Maspero,	Paris.

SECTION III. — 5.

Political Economy and History.

James Bryce,	London.
Adolf Harnack,	Berlin.
Sir G. O. Trevelyan, Bart.,	London.
John Morley,	London.
Pasquale Villari,	Florence.

SECTION IV. — 6.

Literature and the Fine Arts.

E. de Amicis,	Florence.
Gaston Boissier,	Paris.
Georg Brandes,	Copenhagen.
F. Brunetière,	Paris.
Jean Léon Gérôme,	Paris.
Rudyard Kipling,	Burwash.

STATUTES AND STANDING VOTES.

STATUTES.

Adopted May 30, 1854: *amended September* 8, 1857, *November* 12, 1862, *May* 24, 1864, *November* 9, 1870, *May* 27, 1873, *January* 26, 1876, *June* 16, 1886, *October* 8, 1890, *January* 11 *and May* 10, 1893, *May* 9 *and October* 10, 1894, *March* 13, April 10 *and May* 8, 1895, *May* 8, 1901, *and January* 8, 1902.

CHAPTER I.

Of Fellows and Foreign Honorary Members.

1. The Academy consists of Resident Fellows, Associate Fellows and Foreign Honorary Members. They are arranged in three Classes, according to the Arts and Sciences in which they are severally proficient, viz.: Class I. The Mathematical and Physical Sciences; — Class II. The Natural and Physiological Sciences; — Class III. The Moral and Political Sciences. Each Class is divided into four Sections, viz.: Class I., Section 1. Mathematics and Astronomy; — Section 2. Physics; — Section 3. Chemistry; — Section 4. Technology and Engineering. Class II., Section 1. Geology, Mineralogy, and Physics of the Globe; — Section 2. Botany; — Section 3. Zoölogy and Physiology; — Section 4. Medicine and Surgery. Class III., Section 1. Philosophy and Jurisprudence: — Section 2. Philology and Archæology; — Section 3. Political Economy and History; — Section 4. Literature and the Fine Arts.

2. The number of Resident Fellows shall not exceed two hundred. Only residents in the Commonwealth of Massachusetts shall be eligible to election as Resident Fellows, but resident fellowship may be retained after removal from the Commonwealth. Each Resident Fellow shall pay an admission fee of ten dollars and such annual assessment, not exceeding ten dollars, as shall be voted by the Academy at each annual

meeting. Resident Fellows only may vote at the meetings of the Academy.

3. The number of Associate Fellows shall not exceed one hundred, of whom there shall not be more than forty in either of the three classes of the Academy. Associate Fellows shall be chosen from persons residing outside of the Commonwealth of Massachusetts. They shall not be liable to the payment of any fees or annual dues, but on removing within the Commonwealth they may be transferred by the Council to resident fellowship as vacancies there occur.

4. The number of Foreign Honorary Members shall not exceed seventy-five; and they shall be chosen from among persons most eminent in foreign countries for their discoveries and attainments in either of the three departments of knowledge above enumerated. There shall not be more than thirty Foreign Members in either of these departments.

CHAPTER II.

Of Officers.

1. There shall be a President, three Vice-Presidents, one for each Class, a Corresponding Secretary, a Recording Secretary, a Treasurer, and a Librarian, which officers shall be annually elected, by ballot, at the Annual Meeting, on the second Wednesday in May.

2. At the Annual Meeting of 1901, nine Councillors shall be elected by ballot, one from each Class of the Academy to serve for one year, one from each Class for two years, and one from each Class for three years; and at annual meetings thereafter three Councillors shall be elected in the same manner, one from each Class, to serve for three years; but the same Fellow shall not be eligible for two successive terms. The nine Councillors, with the President, the three Vice-Presidents, the two Secretaries, the Treasurer, and the Librarian, shall constitute the Council. Five members shall constitute a quorum. It shall be the duty of this Council to exercise a discreet supervision over all nominations and elections. With the consent of the Fellow interested, they shall have power to make transfers between the several Sections of the same Class, reporting their action to the Academy.

3. If any office shall become vacant during the year, the vacancy shall be filled by a new election, and at the next stated meeting, or at a meeting called for this purpose.

CHAPTER III.

Of Nominations of Officers.

1. At the stated meeting in March, the President shall appoint from the next retiring Councillors a Nominating Committee of three Fellows, one for each class.

2. It shall be the duty of this Nominating Committee to prepare a list of candidates for the offices of President, Vice-Presidents, Corresponding Secretary, Recording Secretary, Treasurer, Librarian, Councillors, and the Standing Committees which are chosen by ballot; and to cause this list to be sent by mail to all the Resident Fellows of the Academy not later than four weeks before the Annual Meeting.

3. Independent nominations for any office, signed by at least five Resident Fellows and received by the Recording Secretary not less than ten days before the Annual Meeting, shall be inserted in the call for the Annual Meeting, which shall then be issued not later than one week before that meeting.

4. The Recording Secretary shall prepare for use, in voting at the Annual Meeting, a ballot containing the names of all persons nominated for office under the conditions given above.

5. When an office is to be filled at any other time than at the Annual Meeting, the President shall appoint a Nominating Committee in accordance with the provisions of Section 1, which shall announce its nomination in the manner prescribed in Section 2 at least two weeks before the time of election. Independent nominations, signed by at least five Resident Fellows and received by the Recording Secretary not later than one week before the meeting for election, shall be inserted in the call for that meeting.

CHAPTER IV.

Of the President.

1. It shall be the duty of the President, and, in his absence, of the senior Vice-President present, or next officer in order as above enumerated, to preside at the meetings of the Academy; to summon extraordinary meetings, upon any urgent occasion; and to execute or see to the execution of the Statutes of the Academy. Length of continuous membership in the Academy shall determine the seniority of the Vice-Presidents.

2. The President, or, in his absence, the next officer as above enumerated, is empowered to draw upon the Treasurer for such sums of money as the Academy shall direct. Bills presented on account of the Library, or the Publications of the Academy, must be previously approved by the respective committees on these departments.

3. The President, or, in his absence, the next officer as above enumerated, shall nominate members to serve on the different committees of the Academy which are not chosen by ballot.

4. Any deed or writing to which the common seal is to be affixed shall be signed and sealed by the President, when thereto authorized by the Academy.

CHAPTER V.

Of Standing Committees.

1. At the Annual Meeting there shall be chosen the following Standing Committees, to serve for the year ensuing, viz.: —

2. The Committee of Finance, to consist of the President, Treasurer, and one Fellow chosen by ballot, who shall have full control and management of the funds and trusts of the Academy, with the power of investing or changing the investment of the same at their discretion. The general appropriations for the expenditures of the Academy shall be moved by this Committee at the Annual Meeting, and all special appropriations from the general and publication funds shall be referred to or proposed by this Committee.

3. The Rumford Committee, of seven Fellows, to be chosen by ballot, who shall consider and report on all applications and claims for the Rumford Premium, also on all appropriations from the income of the Rumford Fund, and generally see to the due and proper execution of this trust.

4. The C. M. Warren Committee, of seven Fellows, to be chosen by ballot, who shall consider and report on all applications for appropriations from the income of the C. M. Warren Fund, and generally see to the due and proper execution of this trust.

5. The Committee of Publication, of three Fellows, one from each Class, to whom all communications submitted to the Academy for publication shall be referred, and to whom the printing of the Memoirs and the Proceedings shall be intrusted.

6. The Committee on the Library, of the Librarian ex officio and three other Fellows, one from each class, who shall examine the Library, and make an annual report on its condition and management.

7. An Auditing Committee of two Fellows, for auditing the accounts of the Treasurer.

CHAPTER VI.

Of the Secretaries.

1. The Corresponding Secretary shall conduct the correspondence of the Academy, recording or making an entry of all letters written in its name, and preserving on file all letters which are received; and at each meeting he shall present the letters which have been addressed to the Academy since the last meeting. Under the direction of the Council for Nomination, he shall keep a list of the Resident Fellows, Associate Fellows, and Foreign Honorary Members, arranged in their Classes and in Sections in respect to the special sciences in which they are severally proficient; and he shall act as secretary to the Council.

2. The Recording Secretary shall have charge of the Charter and Statute-book, journals, and all literary papers belonging to the Academy. He shall record the proceedings of the Academy at its meetings; and after each meeting is duly opened, he shall read the record of the preceding meeting. He shall notify the meetings of the Academy, apprise officers and committees of their election or appointment, and inform the Treasurer of appropriations of money voted by the Academy. He shall post up in the Hall a list of the persons nominated for election into the Academy; and when any individual is chosen, he shall insert in the record the names of the Fellows by whom he was nominated.

3. The two Secretaries, with the Chairman of the Committee of Publication, shall have authority to publish such of the records of the meetings of the Academy as may seem to them calculated to promote its interests.

CHAPTER VII.

Of the Treasurer.

1. The Treasurer shall give such security for the trust reposed in him as the Academy shall require.

2. He shall receive officially all moneys due or payable, and all bequests or donations made to the Academy, and shall pay such sums as the Academy may direct. He shall keep an account of all receipts and expenditures; shall submit his accounts to the Auditing Committee; and shall report the same at the expiration of his term of office.

3. The Treasurer shall keep separate accounts of the income and appropriation of the Rumford Fund and of other special funds, and report the same annually.

4. All moneys which there shall not be present occasion to expend shall be invested by the Treasurer, under the direction of the Finance Committee.

CHAPTER VIII.

Of the Librarian and Library.

1. It shall be the duty of the Librarian to take charge of the books, to keep a correct catalogue of them, to provide for the delivery of books from the Library, and to appoint such agents for these purposes as he may think necessary. He shall make an annual report on the condition of the Library.

2. The Librarian, in conjunction with the Committee on the Library, shall have authority to expend such sums as may be appropriated, either from the General, Rumford or other special Funds of the Academy, for the purchase of books, and for defraying other necessary expenses connected with the Library.

3. To all books in the Library procured from the income of the Rumford Fund, or other special funds, the Librarian shall cause a stamp or label to be affixed, expressing the fact that they were so procured.

4. Every person who takes a book from the Library shall give a receipt for the same to the Librarian or his assistant.

5. Every book shall be returned in good order, regard being had to the necessary wear of the book with good usage. If any book shall be lost or injured, the person to whom it stands charged shall replace it by a new volume or set, if it belongs to a set, or pay the current price of the volume or set to the Librarian; and thereupon the remainder of the set, if the volume belonged to a set, shall be delivered to the person so paying for the same.

6. All books shall be returned to the Library for examination at least one week before the Annual Meeting.

7. The Librarian shall have custody of the Publications of the Academy and shall distribute copies among the Associate Fellows and Foreign Honorary Members, at their request. With the advice and consent of the President, he may effect exchanges with other associations.

CHAPTER IX.

Of Meetings.

1. There shall be annually four stated meetings of the Academy; namely, on the second Wednesday in May (the Annual Meeting), on the second Wednesday in October, on the second Wednesday in January, and on the second Wednesday in March. At these meetings only, or at meetings adjourned from these and regularly notified, shall appropriations of money be made, or alterations of the statutes or standing votes of the Academy be effected.

2. Fifteen Fellows shall constitute a quorum for the transaction of business at a stated meeting. Seven Fellows shall be sufficient to constitute a meeting for scientific communications and discussions.

3. The Recording Secretary shall notify the meetings of the Academy to each Fellow residing in Boston and the vicinity; and he may cause the meetings to be advertised, whenever he deems such further notice to be needful.

CHAPTER X.

Of the Election of Fellows and Honorary Members.

1. Elections shall be made by ballot, and only at stated meetings.

2. Candidates for election as Resident Fellows must be proposed by two Resident Fellows of the section to which the proposal is made, in a recommendation signed by them, and this recommendation shall be transmitted to the Corresponding Secretary, and by him referred to the Council for nomination. No person recommended shall be reported by the Council as a candidate for election, unless he shall have received a written approval, signed at a meeting of the Council by at least five of its members. All nominations thus approved shall be read to the Academy at a stated meeting, and shall then stand on the nomination list during the interval between two stated meetings, and until the balloting. No person shall be elected a Resident Fellow, unless he shall have been resident in this Commonwealth one year next preceding his election. If any person elected a Resident Fellow shall neglect for one year to pay his admission fee, his election shall be void; and if any Resident Fellow shall neglect to pay his annual assessments

for two years, provided that his attention shall have been called to this article, he shall be deemed to have abandoned his Fellowship; but it shall be in the power of the Treasurer, with the consent of the Council, to dispense (*sub silentio*) with the payment both of the admission fee and of the assessments, whenever in any special instance he shall think it advisable so to do.

3. The nomination of Associate Fellows may take place in the manner prescribed in reference to Resident Fellows. The Council may in like manner originate nominations of Associate Fellows, which must be read at a stated meeting previous to the election, and be exposed on the nomination list during the interval.

4. Foreign Honorary Members shall be chosen only after a nomination made at a meeting of the Council, signed at the time by at least seven of its members, and read at a stated meeting previous to that on which the balloting takes place.

5. Three fourths of the ballots cast must be affirmative, and the number of affirmative ballots must amount to eleven to effect an election of Fellows or Foreign Honorary Members.

6. A majority of any section of the Academy is empowered to present lists of persons deemed best qualified to fill vacancies occurring in the number of Foreign Honorary Members or Associate Fellows allotted to it; and such lists, after being read at a stated meeting, shall be referred to the Council for Nomination.

7. If, in the opinion of a majority of the entire Council, any Fellow — Resident or Associate — shall have rendered himself unworthy of a place in the Academy, the Council shall recommend to the Academy the termination of his Fellowship; and provided that a majority of two thirds of the Fellows at a stated meeting, consisting of not less than fifty Fellows, shall adopt this recommendation, his name shall be stricken off the roll of Fellows.

CHAPTER XI.

Of Amendments of the Statutes.

1. All proposed alterations of the Statutes or additions to them, shall be referred to a committee, and, on their report at a subsequent meeting, shall require for enactment a majority of two thirds of the members present, and at least eighteen affirmative votes.

2. Standing votes may be passed, amended, or rescinded, at any

stated meeting, by a majority of two thirds of the members present. They may be suspended by a unanimous vote.

CHAPTER XII.

Of Literary Performances.

1. The Academy will not express its judgment on literary or scientific memoirs or performances submitted to it, or included in its publications.

STANDING VOTES.

1. Communications of which notice had been given to the Secretary shall take precedence of those not so notified.

2. Resident Fellows who have paid all fees and dues chargeable to them are entitled to receive one copy of each volume or article printed by the Academy, on application to the Librarian personally or by written order, within two years from the date of publication. And the current issues of the Proceedings shall be supplied, when ready for publication, free of charge, to all the Fellows and members of the Academy who desire to receive them.

3. The Committee of Publication shall fix from time to time the price at which the publications of the Academy may be sold. But members may be supplied at half this price with volumes which they are not entitled to receive free, and which are needed to complete their sets.

4. Two hundred extra copies of each paper accepted for publication in the Memoirs or Proceedings of the Academy shall be placed at the disposal of the author, free of charge.

5. Resident Fellows may borrow and have out from the Library six volumes at any one time, and may retain the same for three months, and no longer.

6. Upon special application, and for adequate reasons assigned, the Librarian may permit a larger number of volumes, not exceeding twelve, to be drawn from the Library for a limited period.

7. Works published in numbers, when unbound, shall not be taken from the Hall of the Academy, except by special leave of the Librarian.

8. Books, publications, or apparatus shall be procured from the income of the Rumford Fund only on the certificate of the Rumford Committee that they, in their opinion, will best facilitate and encourage the making of discoveries and improvements which may merit the Rumford Premium.

9. A meeting for receiving and discussing scientific communications may be held on the second Wednesday of each month not appointed for stated meetings, excepting July, August, and September.

RUMFORD PREMIUM.

In conformity with the terms of the gift of Benjamin, Count Rumford, granting a certain fund to the American Academy of Arts and Sciences, and with a decree of the Supreme Judicial Court for carrying into effect the general charitable intent and purpose of Count Rumford, as expressed in his letter of gift, the Academy is empowered to make from the income of said fund, as it now exists, at any Annual Meeting, an award of a gold and a silver medal, being together of the intrinsic value of three hundred dollars, as a premium to the author of any important discovery or useful improvement in light or in heat, which shall have been made and published by printing, or in any way made known to the public, in any part of the continent of America, or any of the American islands; preference being always given to such discoveries as shall, in the opinion of the Academy, tend most to promote the good of mankind; and to add to such medals, as a further premium for such discovery and improvement, if the Academy see fit so to do, a sum of money not exceeding three hundred dollars.

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